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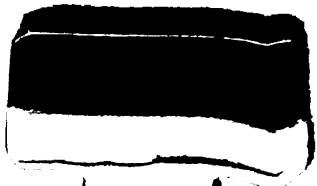
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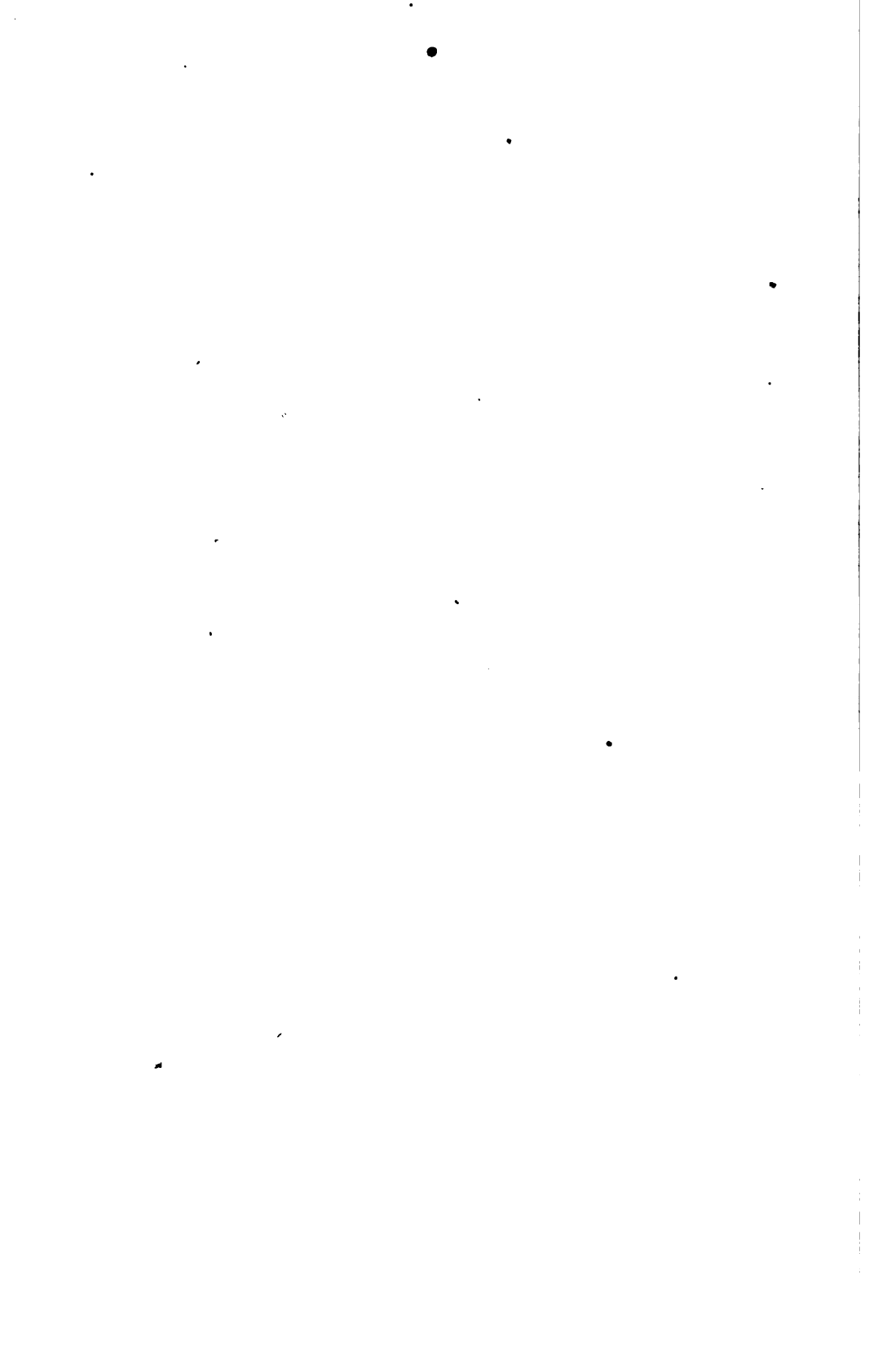
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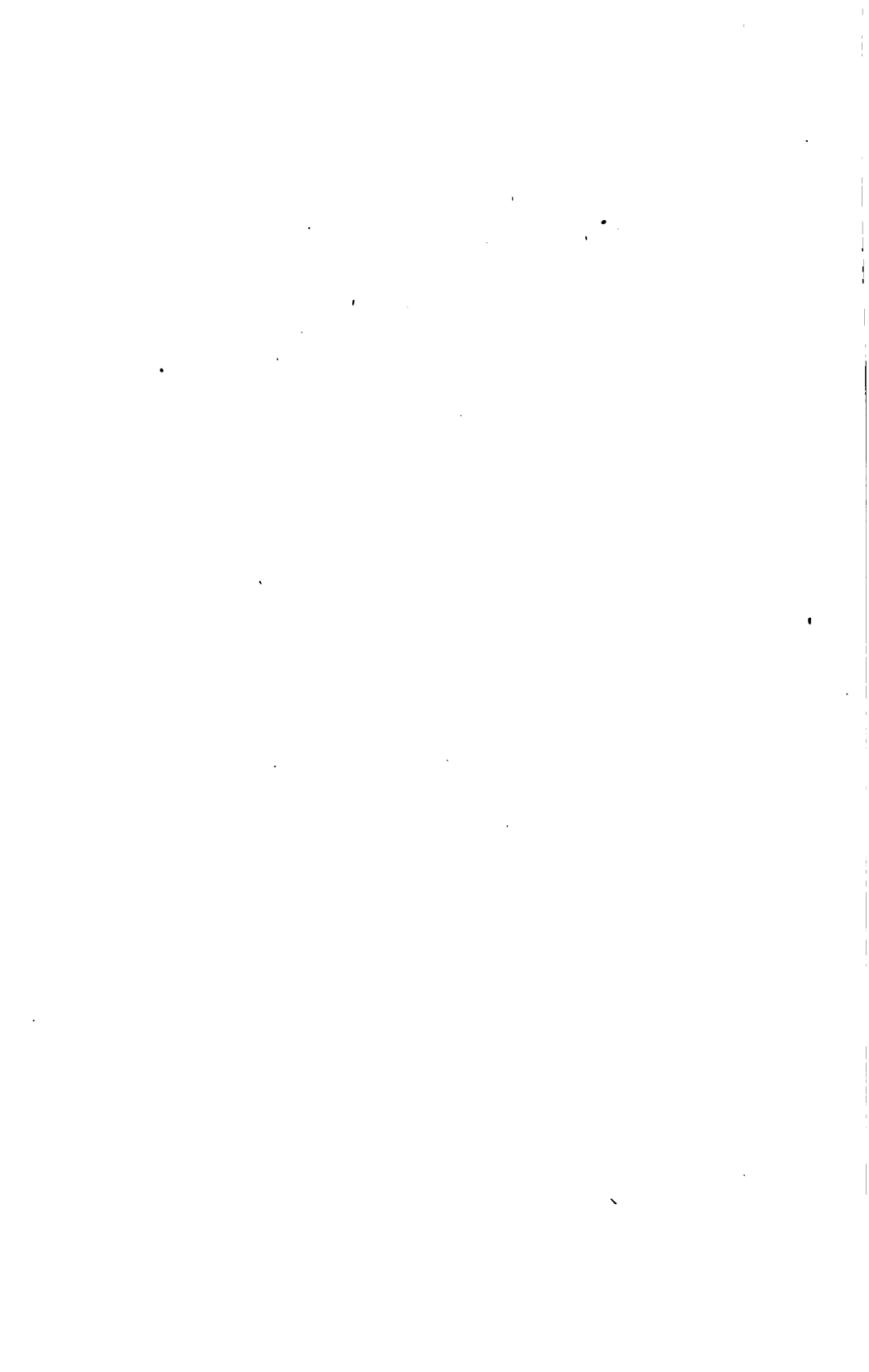


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Proceedings of The Second Pan American Scientific Congress

WASHINGTON, U. S. A.

**Monday, December 27, 1915
to Saturday, January 8, 1916**

Compiled and edited under the direction of
Glen Levin Swiggott, Assistant Secretary General

SECTION IV

(IN TWO PARTS)

PART 2

EDUCATION

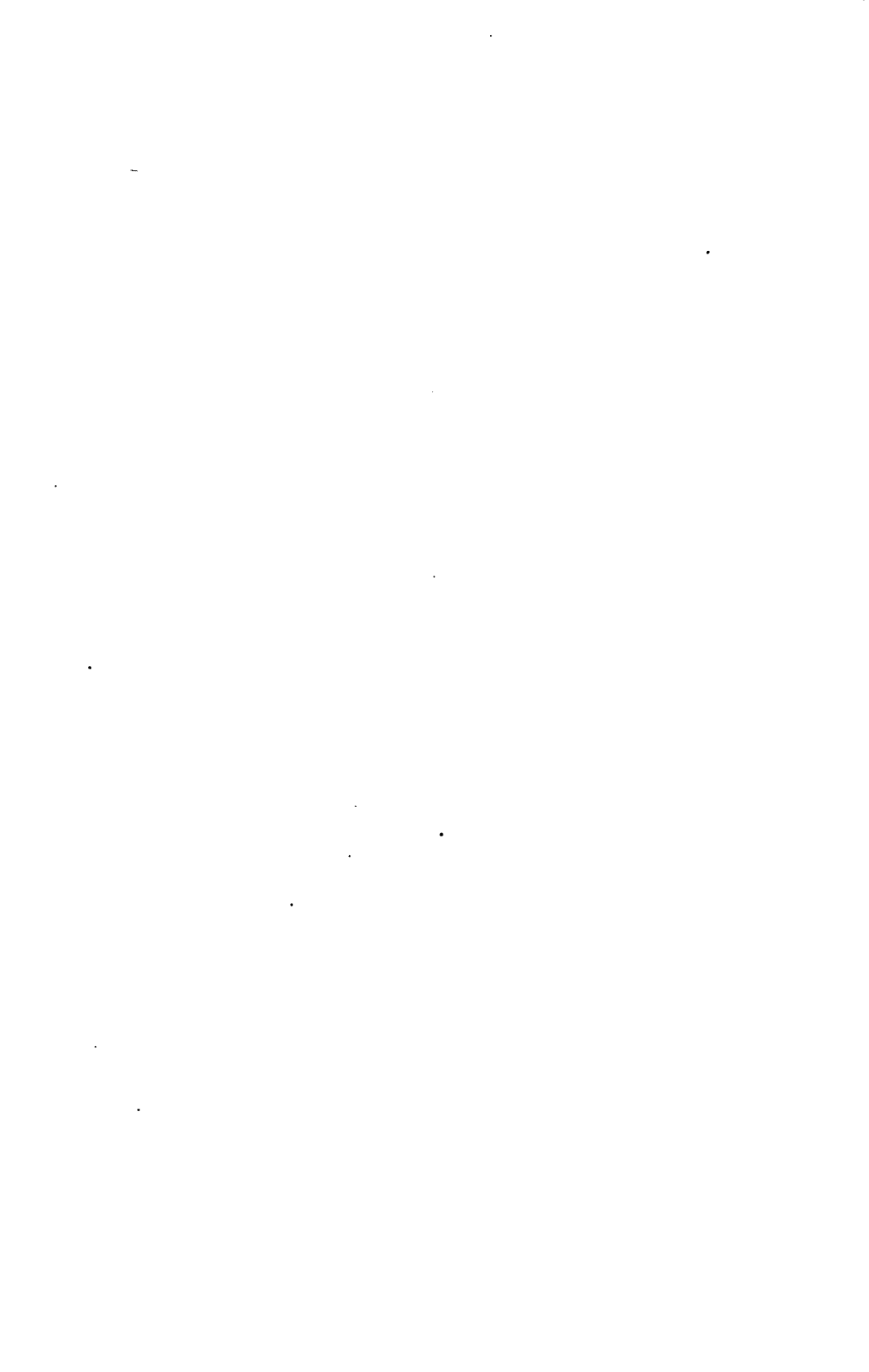
**P. P. CLAXTON, COMMISSIONER OF EDUCATION OF
THE UNITED STATES, CHAIRMAN**



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LETTERS OF TRANSMITTAL.

WASHINGTON, D. C., *May 31, 1917.*

SIR: Pursuant to the recommendation of the executive committee of the Second Pan American Scientific Congress, which was held in Washington December 27, 1915-January 8, 1916, and by the cooperation of the United States Congress (urgent deficiency bill, Sept. 8, 1916), the papers and discussions of that great international scientific gathering have been compiled and edited for publication under the able direction of the Assistant Secretary General, Dr. Glen Levin Swiggett. In this volume is contained the report of Section IV, of which Dr. P. P. Claxton, of the executive committee, was chairman.

In my formal report, which has already been submitted, I enlarged upon the importance of the Second Pan American Scientific Congress, its large attendance, and the high quality of its papers and discussions. I will, therefore, in this letter, which, in slightly varied form, introduces each volume, make only a few general references.

All of the 21 Republics of the Western Hemisphere were represented by official delegates at the Congress. Unofficial delegates, moreover, from the leading scientific associations and educational institutions of these Republics presented papers and took part in its deliberations. The papers and discussions may be considered, therefore, as an expression of comprehensive Pan American scientific effort and possess, in consequence, inestimable value.

The Congress was divided into nine main sections, which, with their chairmen, were as follows:

- I. ANTHROPOLOGY. W. H. Holmes.
- II. ASTRONOMY, METEOROLOGY, AND SEISMOLOGY. Robert S. Woodward.
- III. CONSERVATION OF NATURAL RESOURCES, Agriculture, Irrigation, and Forestry. George M. Rommel.
- IV. EDUCATION. P. P. Claxton.
- V. ENGINEERING. W. H. Bixby.
- VI. INTERNATIONAL LAW, PUBLIC LAW, AND JURISPRUDENCE. James Brown Scott.
- VII. MINING, METALLURGY, ECONOMIC GEOLOGY, AND APPLIED CHEMISTRY. Henry Jennings.
- VIII. PUBLIC HEALTH AND MEDICAL SCIENCE. William C. Gorgas.
- IX. TRANSPORTATION, COMMERCE, FINANCE, AND TAXATION. L. S. Rowe.

These sections, in turn, were further subdivided into 45 subsections.

Over 200 delegates were in attendance from the Latin American Republics, while over a thousand from the United States participated in its meetings. The discussions and proceedings of the Congress attracted world-wide attention, and it was undoubtedly the greatest international scientific meeting that has assembled anywhere in the history of the Western Hemisphere and possibly of the world. It was, therefore, a fitting successor to the first Pan American Scientific Congress, which assembled in Santiago, the capital of Chile, in 1903, and to its predecessors, confined to Latin American representation, which in former years met, respectively, in Rio de Janeiro, Montevideo, and Buenos Aires. Its success was a logical result of these preceding gatherings in Latin America and of the hearty cooperation of the Latin American Governments and scientists.

To those who may have their attention brought only to the individual volumes covering the papers and discussions and who wish to know more of the proceedings of the Congress and the results accomplished by it, it is recommended that they should

also read "The Final Act—An Interpretative Commentary Thereon," prepared under the direction of Dr. James Brown Scott, reporter general of the Congress, and the report of the secretary general, prepared by the latter and the assistant secretary general, Dr. Glen Levin Swiggett. In these will be found not only the final act and the illuminating comment thereon but lists of delegates, participating Governments, societies, educational institutions, and other organizations, together with a careful story and history of the Congress. They can be obtained by addressing the Director General of the Pan American Union, Washington, D. C.

In conclusion, I want to briefly repeat, as secretary general of the Congress, my appreciation, already expressed in my formal report, of the hearty cooperation in making the Congress a success given by everyone concerned from the President of the United States, yourself as Secretary of State, and the delegates of Latin America and the United States, down to the office employees. The great interest manifested by the permanent executive committee, headed by Mr. William Phillips, then Third Assistant Secretary of State, the Carnegie Endowment for International Peace through its secretary, Dr. James Brown Scott, and the executive aid of Dr. Glen Levin Swiggett, as assistant secretary general, were vitally instrumental in making the gathering memorable. The Pan American Union, the official international organization of all the American Republics, and whose governing board is made up of the Latin American diplomats in Washington and the Secretary of State of the United States, lent the favorable influence of that powerful organization to the success of the Congress and authorized me as the director general of the Union to also take up the duties of secretary general of the Congress.

Yours, very truly,

(Signed)

JOHN BARRETT,
Secretary General.

The Honorable The SECRETARY OF STATE,
Washington, D. C.

WASHINGTON, D. C., *31 de maio de 1917.*

EXMO. SR.: Em cumprimento de uma recommendação emanada da Comissão Executiva do Segundo Congresso Científico Pan Americano, que teve lugar em Washington, de 27 de dezembro de 1915 a 8 de janeiro de 1916, e, devido ao auxilio do Congresso dos Estados Unidos (Lei para Orçamentos extraordinarios de 8 de setembro, 1916) as memorias e as discussões dessa assemblêa scientifica internacional, foram colligidas e preparadas para publicação sob a proficiente direcção do Secretario Geral Adjuncto, Dr. Glen Levin Swiggett. Este volume comprehende o relatório da secção IV que foi presidida pelo Snr. P. P. Claxton, da Comissão Executiva.

No meu relatório official, que já tive a honra de apresentar, me detive sobre a importancia do Segundo Congresso Científico Pan Americano, da sua grande concorrência e da alta importancia das theses e das discussões. Na presente nota, portanto, de uma maneira muito ligeira, destinada a apresentar cada um dos volumes, eu farei apenas algumas referencias muito geraes.

Todas as Republicas do Hemispherio Occidental, vinte e uma em numero, se achavam representadas por delegados officiaes ao Congresso. Delegados sem nomeação dos Governos, mas representando as mais notaveis sociedades scientificas e instituições de ensino dessas republicas apresentaram theses e tomaram parte nas deliberações. As memorias e discussões devem ser consideradas portanto, como a expressão de um justificavel trabalho scientifico Pan Americano e possui, por esse motivo, um valor sem equal.

O Congresso foi dividido em nove secções principaes, que a seguir enuméro, com os nomes dos seus presidentes:

I. ANTHROPOLOGIA. W. H. Holmes.

II. ASTRONOMIA, METEOROLOGIA E SISMOLOGIA. Robert S. Woodward.

- III. CONSERVAÇÃO DA RIQUEZA NACIONAL, AGRICULTURA, IRRIGAÇÃO E SILVICULTURA. George M. Rommel.
- IV. INSTRUÇÃO. P. P. Olaxton.
- V. ENGENHARIA. W. H. Bixby.
- VI. DIREITO INTERNACIONAL, DIREITO PUBLICO E JURISPRUDENCIA. James Brown Scott.
- VII. MINAS, METALLURGIA, GEOLOGIA PRACTICA E CHIMICA INDUSTRIAL. Hennen Jennings.
- VIII. SAUDE PUBLICA E SCIENCIAS MEDICAS. William C. Gorgas.

IX. VIAS DE COMMUNICAÇÃO, COMMERCIO, FINANÇAS E IMPOSTOS. L. S. Rowe.

Estas secções, por seu lado, eram subdivididas em 45 subsecções.

Mais de 200 delegados das Republicas da America Latina frequentaram as sessões enquanto os Estados Unidos se achavam representados por mais de mil pessoas. As discussões e os relatorios do Congresso attrahiram a attenção de todo o mundo e foi sem duvida a maior assemblea scientifica que se realizou no Hemispherio Occidental e talvez em todo o mundo. Foi sem duvida um idoneo continuador do Primeiro Congresso Scientifico Pan-Americano, que se celebrou em Santiago, capital da Republica Chilena em 1908 e das anteriores assembleas que previamente se tinham realizado, apenas com delegados da America Latina e que se reuniram em annos anteriores no Rio de Janeiro, Montevideu e Buenos Aires. O seu successo foi um resultado logico das reuniões previas na America Latina e do cordial concurso dos Governos da America latina e dos seus homens de sciencia.

A aquelles que não quizerem limitar-se a consultar os volumes que contém as memorias e as discussões e que desejarem conhecer alguma cousa mais dos trabalhos do Congresso e dos resultados por elle alcançado se lhes recommenda a leitura da Acta Final—a exposição geral concernente á mesma—publicada sob a direcção do Sr. Dr. James Brown Scott, Relator Geral do Congresso, e o relatorio do Secretario Geral, preparado pelo abaixo assignado e pelo Secretario Geral Adjuncto Sr. Dr. Glen Levin Swiggett. Nestes trabalhos encontrar-se-hão não sómente a acta final mas tambem um magnifico commentario, a lista dos delegados dos Governos que adheriram, sociedades, instituições de ensino e outras corporações, seguidas de uma cuidada historia do Congresso. Estes volumes continuam á disposição dos que os pedirem ao Director Geral da União Pan-Americana, Washington, D. C.

Em conclusão, eu desejo repetir, em duas palavras, como Secretario Geral do Congresso, o meu apreço e reconhecimento, que já tive occasião de exprimir no meu relatorio official, pela cordial cooperação que por todos me foi prestada para levar a bom exito este congresso, desde o Presidente dos Estados Unidos, V. Exa., como Secretario d'Estado, os Senhores Delegados da America Latina e dos Estados Unidos até os diversos funcionarios do Congresso. O grande interesse manifestado pela Commissão Permanente Executiva presidida pelo Sr. William Phillips, ao tempo terceiro Sub-secretario d'Estado, pelo Instituto de Carnegie para a Paz Internacional na pessoa do Sr. Dr. James Brown Scott, assim como a collaboração prestada pela Sr. Dr. Glen Levin Swiggett, como Secretario Geral Adjuncto, constituiram obras basilares para o successo desta reunião.

A União Pan-Americana, instituição internacional sustentada por todas as Republicas Americanas e cujo Conselho de Administração é constituído pelos representantes diplomaticos em Washington e pelo Secretario d'Estado dos Estados Unidos, contribuiu com a sua poderosa influencia para o bom exito do Congresso e me auctORIZOU a servir de Secretario Geral do Congresso.

Com a maior consideração, subcrevo-me

De V. Exa.,
 Vor. Mto. Atto.,
 (Ass.) JOHN BARRETT,
 Secretario Geral.

EXMO. SR. SECRETARIO DE ESTADO,
 Washington, D. C.

WASHINGTON, D. C., 31 de mayo de 1917.

SEÑOR:

En cumplimiento de una recomendación emanada de la Comisión Ejecutiva del Segundo Congreso Científico Panamericano que se reunió en Washington desde el 27 de diciembre de 1915 hasta el 8 de enero de 1916 y gracias a la cooperación al efecto prestada por el Congreso de los Estados Unidos mediante su ley sobre rectificación del presupuesto dictada el 8 de setiembre de 1916, hánse recopilado y preparado para su publicación, bajo la hábil dirección del Sr. Dr. Glen Levin Swiggett, Subsecretario General, las memorias presentadas a dicho Congreso y los debates a que dieron lugar. El presente volumen contiene el informe relativo a la Sección IV, de la cual fué presidente el Sr. P. P. Claxton, miembro de la Comisión Ejecutiva.

En el informe general que ya tuve el honor de presentarle, me fué dable considerar detenidamente la importancia del Segundo Congreso Científico Panamericano, la numerosa concurrencia que al mismo asistió y el elevado mérito de las memorias presentadas y de los debates que en aquel se suscitaron. Por consiguiente, he de limitarme en la presente, destinada a servirle de mera introducción a cada uno de los volúmenes, a algunas consideraciones de carácter general.

En el Congreso estuvieron representadas por medio de delegaciones oficiales las veinte y una repúblicas del Hemisferio Occidental. También asistieron al mismo, tomando participación en sus debates y presentando trabajos personales, delegados particulares de los principales cuerpos científicos y de los institutos docentes de esas mismas repúblicas. En tal virtud, las memorias y los debates mencionados deben ser considerados como la expresión de un amplio esfuerzo científico panamericano, encerrando, por lo tanto, un valor inestimable.

El Congreso estuvo dividido en nueve secciones principales que en seguida paso a enumerar junto con el nombre de sus presidentes. Fueron las siguientes:

- I. ANTHROPOLOGÍA. W. H. Holmes.
- II. ASTRONOMÍA, METEOROLOGÍA Y SISMOGRAFÍA. Robert S. Woodward.
- III. CONSERVACIÓN DE LAS FUENTES NATURALES DE RIQUEZA, AGRICULTURA, IRRIGACIÓN Y SELVICULTURA. George M. Rommel.
- IV. INSTRUCCIÓN. P. P. Claxton.
- V. INGENIERÍA. W. H. Bixby.
- VI. DERECHO INTERNACIONAL, DERECHO PÚBLICO Y JURISPRUDENCIA. James Brown Scott.
- VII. MINERÍA, METALURGIA, GEOLOGÍA ECONÓMICA Y QUÍMICA APLICADA. Hennen Jennings.

VIII. SALUBRIDAD PÚBLICA Y CIENCIA MÉDICA. William C. Gorgas.

IX. TRASPORTE, COMERCIO, FINANZAS E IMPUESTOS. L. S. Rowe.

Estas secciones estuvieron divididas, a su vez, en cuarenta y cinco subsecciones.

De las repúblicas latino-americanas asistieron más de doscientos delegados; en tanto que las sesiones del Congreso concurrieron más de mil personas de los Estados Unidos. Los trabajos y debates del cuerpo despertaron universal interés, pues indudablemente fué aquel la asamblea científica más grande que registra la historia del Hemisferio Occidental y probablemente la del mundo. Él fué, en consecuencia, digno continuador del Primer Congreso Científico Panamericano que en 1910 se reunió en la capital de Chile y de los que previamente y con una asistencia exclusivamente latino-americana se habían congregado en Río de Janeiro, Montevideo y Buenos Aires. Su éxito fué consecuencia lógica de las asambleas que anteriormente se habían reunido en la América latina y del cordial concurso que recibió de los gobiernos y de los hombres de ciencia de esa misma parte de América.

A cuantos no quisieren limitarse a consultar los volúmenes que contienen las memorias y los debates y desearan conocer algo más de las labores del Congreso y de los resultados por él alcanzados, se les recomienda la lectura del Acta Final y de la Exposición General concerniente a la misma que escribió el Dr. James Brown Scott, Informante General del Congreso, así como el Informe del Secretario General, prepa-

rado por el suscrito y por el Dr. Glen Levin Swiggett, Subsecretario General del mismo. En estos documentos podrán hallar no sólo el Acta Final y luminosas consideraciones acerca de la misma, sino también la nómina de los delegados y de los gobiernos, sociedades e institutos docentes que tuvieron representación en la Asamblea, juntamente con una relación puntualizada de las labores de la misma. Los que deseen obtener estos volúmenes pueden solicitarlos del Director General de la Unión Panamericana en Wáshington, D. C.

Como Secretario General del Congreso deseo hacer constar una vez más, antes de concluir, el agradecimiento que en mi informe general expresé por el cordial concurso que de todos recibí para asegurar el éxito del Congreso, desde el Presidente de los Estados Unidos y usted mismo como Secretario de Estado y desde los delegados de la América Latina y de los Estados Unidos hasta los diversos funcionarios del Congreso. El gran interés desplegado por la Comisión Permanente Ejecutiva, que presidió el Sr. William Phillips, a la sazón Tercer Subsecretario de Estado; por la Fundación Carnegie para la Paz Internacional, por el órgano de su Secretario, Dr. James Brown Scott; así como la colaboración del Dr. Glen Levin Swiggett, Subsecretario General, contribuyeron poderosamente a hacer memorable la asamblea. La Unión Panamericana, institución internacional sostenida por todas las repúblicas de América y cuyo Consejo Directivo está formado por los representantes diplomáticos latinoamericanos residentes en Wáshington y por el Secretario de Estado de los Estados Unidos, contribuyó con su poderosa influencia al éxito del Congreso y me autorizó para que desempeñara las funciones de Secretario General de aquél.

Con sentimientos de la más alta consideración me suscribo

De usted muy atento servidor,

JOHN BARRETT,
Secretario General.

Al Honorable SECRETARIO DE ESTADO,
Wáshington, D. C.

WASHINGTON, D. C., *le 31 mai 1917.*

MONSIEUR: Conformément à la recommandation du Comité Exécutif du Second Congrès Scientifique Panaméricain qui a eu lieu à Washington du 27 décembre 1915 au 8 janvier 1916, et par la coopération du Congrès des États-Unis (loi du budget extraordinaire, 8 septembre 1916), les mémoires et discussions de cette grande réunion scientifique internationale ont été recueillis et édités pour être publiés sous l'habile direction du docteur Glen Levin Swiggett sous-secrétaire général. Ce volume contient le rapport de la section IV, dont M. P. P. Claxton du Comité Exécutif était président.

Dans mon rapport officiel qui a été déjà soumis, je me suis étendu sur l'importance du Second Congrès Scientifique Panaméricain, sur le grand nombre de personnes qui y étaient présentes et sur l'excellence de ses mémoires et de ses discussions. C'est pourquoi, dans cette lettre qui, après avoir subi quelques changements sans importance, sert d'introduction à chaque volume, je n'en parlerai que d'une manière générale.

Toutes les républiques de l'Hémisphère Occidental au nombre de vingt-et-une étaient représentées au Congrès. De plus, des délégués à titre officieux envoyés par les associations scientifiques et les institutions éducatives les plus en vue de ces républiques ont soumis des mémoires et ont pris part aux délibérations. On peut donc considérer les mémoires et les discussions comme l'expression d'un grand effort scientifique panaméricain, possédant en conséquence une valeur inestimable.

Le Congrès était divisé en neuf sections principales que nous énumérons ci-dessous, en donnant le nom de leurs présidents.

I. ANTHROPOLOGIE. W. H. Holmes.

II. ASTRONOMIE, MÉTÉOROLOGIE ET SISMOLOGIE. Robert S. Woodward.

III. CONSERVATION DES RESSOURCES NATURELLES, AGRICULTURE, IRRIGATION ET FORÊTS. George M. Rommel.

IV. INSTRUCTION PUBLIQUE. P. P. Claxton.

V. GÉNIE CIVIL. W. H. Bixby.

VI. DROIT INTERNATIONAL, DROIT PUBLIC ET JURISPRUDENCE. James Brown Scott.

VII. MINES, MÉTALLURGIE, GÉOLOGIE PRATIQUE, ET CHIMIE APPLIQUÉE. Hennen Jennings.

VIII. SANTÉ PUBLIQUE ET SCIENCE MÉDICALE. William C. Gorgas.

IX. TRANSPORT, COMMERCE, FINANCE ET IMPÔT. L. S. Rowe.

A leur tour ces sections étaient subdivisées en quarante-cinq sous-sections.

On y comptait plus de deux cents délégués des républiques latino-américaines, et plus de mille délégués des États-Unis ont assisté aux réunions. Les discussions et les procès-verbaux du Congrès ont attiré l'attention du monde entier, et il a été sans le moindre doute la plus grande assemblée scientifique internationale de l'histoire de l'Hémisphère Occidental, et peut-être même du monde entier, qui se soit réunie jusqu'ici. Venant après le Premier Congrès Scientifique Panaméricain qui s'est réuni à Santiago, capitale du Chili, en 1908, et après ceux qui ont eu lieu précédemment, respectivement à Rio de Janeiro, à Montevideo et à Buenos-Ayres, ces derniers n'ayant que des représentants de l'Amérique Latine, il s'est montré leur digne successeur. Sa réussite a été un logique résultat de ces précédents concours dans l'Amérique Latine et de la sincère et cordiale coopération des gouvernements et des hommes de science de l'Amérique Latine.

Pour ceux qui n'ont porté leur attention que sur les volumes renfermant les mémoires et les discussions, et qui désireraient connaître d'une manière plus approfondie les actes et procès-verbaux du Congrès, ainsi que les résultats qui s'en sont suivis, je leur conseillerais de lire "L'acte Final, Commentaire explicatif," rédigé sous la direction du docteur James Brown Scott, rapporteur général du Congrès, et le rapport du Secrétaire Général rédigé par ce dernier et le docteur Glen Levin Swiggett. En les lisant on n'y trouvera pas seulement l'Acte Final et le commentaire explicatif, mais encore les listes des délégués, des gouvernements qui ont participé au Congrès, des sociétés, des institutions éducatives et autres, en même temps qu'un compte rendu soigné ainsi que l'histoire du Congrès. On peut se les procurer en faisant une demande par écrit au Directeur Général de l'Union Panaméricaine à Washington, D. C.

En terminant, je vais en qualité de Secrétaire Général du Congrès exprimer de nouveau en peu de mots mes remerciements, ce que j'ai déjà fait dans mon rapport officiel pour la part que chacun a eue dans la réussite du Congrès depuis le Président des États-Unis, vous comme Secrétaire d'État, les délégués de l'Amérique Latine et ceux des États-Unis jusqu'aux employés de bureau. Le haut intérêt manifesté par le Comité Exécutif permanent présidé par M. William Phillips, qui était alors troisième Sous-Secrétaire d'État, par la Fondation Carnegie pour la Paix Internationale, par l'entremise de son secrétaire le docteur James Brown Scott, et l'aide prêté dans l'exécution par le docteur Glen Levin Swiggett, comme sous-secrétaire général, ont puissamment contribué à faire de ce Congrès un événement mémorable. L'Union Panaméricaine, administration officielle internationale de toutes les républiques américaines, et dont le Comité d'Administration est composé des diplomates latino-américains à Washington et du Secrétaire d'État des États-Unis, a usé de sa favorable influence pour assurer le succès du Congrès et m'a autorisé, en qualité de Directeur Général de l'Union, à prendre en mains les responsabilités de Secrétaire Général du Congrès.

Veillez agréer, M. le Secrétaire d'État, en même temps que mes respectueux hommages l'assurance de mon entier dévouement,

JOHN BARRETT,
Secrétaire Général.

MONSIEUR LE SECRÉTAIRE D'ÉTAT,
Washington, D. C.

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FOREWORD.

The Second Pan American Scientific Congress, through its section on education, gave to educators of the American Republics an opportunity to meet and know each other and to learn of educational ideals and practices of the several countries; to find out what these Republics have in common and how each is striving to adapt its system of education to the needs of democracy and modern life. In all the meetings of this section there was apparent a desire for a closer relation between the countries represented and for such modifications of the courses of study in their schools as will give to the people of each country a better understanding of the geography, history, resources, language, literature, life, and ideals of all, to the end that there may result mutual helpfulness, good will, and permanent peace among them.

One result of the work of this section was a larger recognition of the principle of democracy in education and of the duty of a democracy to give to all its children and youth full, free, and equal opportunity for such education as will enable them to perform intelligently and well the duties of citizenship, to make an honest living, and to contribute their part to the common wealth.

The discussions of the section and the informal conversation of its members showed clearly that it is very desirable that educators of the American Republics should have some effective means of communication, so that what is best in any one of these countries may, with as little delay as possible, become the common property of all, and that there should be organized a Pan American educational association drawing its membership from the leaders in all grades of education and holding its meetings regularly every two or three years, first in one country and then in another. It was the sense of the section that there should be established in connection with the Pan American Union, or elsewhere, a permanent bureau or office of education to facilitate intercommunication and to provide opportunity for the study of such phases and problems of education as are common to several or all of these countries. It was also the sense of the section that some plan should be perfected for the interchange of professors and students.

I desire to express to all who prepared papers for this section of the congress the sincere thanks and hearty appreciation of the members of the subsection committees and of the vice chairman of the section committee and myself.

P. P. CLAXTON, *Chairman.*

SESSION OF SUBSECTION 6 OF SECTION IV.¹

NEW WILLARD HOTEL,
Tuesday morning, January 4, 1916.

Chairman, A. A. HAMMERSCHLAG.

Session called to order at 9.30 o'clock by the chairman.

The following papers were presented at this session:

Methods of teaching highway engineering, by Arthur H. Blanchard.

Methods of teaching ceramic and cement technology, by Arthur S. Watts.

Methods of teaching chemical engineering, by M. C. Whitaker.

Methods of teaching electrical engineering, by Dugald C. Jackson.

Essential physical equipment for engineering education, by C. H. Benjamin.

Coordination and cooperation within and between technical schools, by Gardner C. Anthony.

Cooperation between engineering societies and engineering schools, by Frederick Remsen Hutton.

Cooperation between engineering societies and engineering schools, by John H. Leete.

Cooperative work in industrial plants in connection with engineering education, by Louis E. Reber.

METHODS OF TEACHING HIGHWAY ENGINEERING.

By ARTHUR H. BLANCHARD,

*Professor in charge of the Graduate Course in Highway Engineering, Columbia University,
and Consulting Highway Engineer, New York City.*

Knowledge pertaining to highway engineering may be acquired through the medium of the following agencies.

- (1) Technical periodical literature.
- (2) Meetings and literature of national organizations of engineers and others interested in the improvement of highways.
- (3) Conferences, monthly bulletins and literature of highway departments.
- (4) Road schools conducted for short periods by educational institutions.
- (5) Apprenticeship under experienced highway engineers.
- (6) Undergraduate courses in highway engineering.
- (7) Graduate courses in highway engineering.

The acquisition of a large store of information pertaining to many branches of highway engineering is practicable by the judicious utilization of one or more of the agen-

¹ There was no stenographic report of this session.

cies mentioned. In the discussion which follows, limitations of usefulness, which exist in connection with some of the agencies, will be pointed out.

In current technical literature for any given month may be found over 500 articles pertaining to the work of the highway engineer. This literature is distributed through many periodicals. For example, the Davis Library of Highway Engineering at Columbia University subscribes to 80 publications which contain articles on highway engineering or closely allied subjects. The experienced highway engineer finds in this immense amount of literature many articles of value. As a medium for the inexperienced student of engineering to secure a knowledge of the fundamental principles of highway engineering, it proves unsatisfactory unless his reading is directed by a man of experience and is used collaterally with the study of fundamental principles as contained in the works written to cover this field of engineering.

As an adjunct to a training in fundamentals, men interested in highway work will, in most cases, receive valuable inspiration and information from attendance on meetings and a perusal of the literature of engineering societies and the several organizations whose work specifically covers the field of highway engineering.

The interchange of opinions and experiences connected with the many problems of highway engineering, which is accomplished through the medium of conferences and literature of national, state, county and municipal highway departments is of inestimable value. As a source of training in fundamentals and the acquisition of comprehensive advanced knowledge in the several branches of highway engineering, it is not usually successful.

What has been said with reference to the value of the meetings and literature of engineering societies and highway departments, likewise applies to the work of the popular road schools which have been conducted for periods of from one to two weeks by many educational institutions in the United States.

In the position of an apprentice, a young man of the right caliber may, by hard work, including a large amount of home study, equip himself for many positions in highway work. Usually the value of the technical training acquired by this method is materially affected by the permanency of the position occupied by the engineer for whom the apprentice is working. In Great Britain, for example, permanency of position of high officials means that it is possible for young men, who are attracted to highway engineering, to enter the department of some county or municipal engineer, and, proving capable, to acquire a valuable experience under the continued leadership of an able engineer.

American educational institutions offer the following channels which are open to men who desire to enter the profession of highway engineering.

- (1) A bachelor of arts, bachelor of philosophy, or bachelor of science collegiate course with electives in engineering.
- (2) A four-year course in general engineering.
- (3) A four-year course in civil engineering.
- (4) A graduate engineering course requiring a baccalaureate degree and a total attendance in educational institutions of from five to six years..
- (5) A graduate highway engineering course in a university after having followed out one of the educational lines outlined above.

In the consideration of the various educational courses open to the man looking forward to occupancy of the highest position in the profession, it is well to consider the essential qualities of an efficient highway engineer. The heads of national, State, county, and municipal highway departments should be broadly educated, thoroughly trained and experienced specialists in highway engineering and efficient executives. They should be able to publicly discuss and economically solve the fundamental problems of economics, administration, construction, and maintenance. Such men should have a broad educational training in such humanities as English, history, economics, philosophy, political and social science. They should also be well grounded in the fundamentals of pure and applied science which underlie high-

way engineering and the several branches of civil engineering which are utilized in highway work.

By a judicious utilization of educational facilities, the accomplishment of the ideal may be attained by several combinations of the courses previously mentioned. For example, it is evident that a man may pursue a four-year general engineering course devoting one-third time to the humanities, one third to pure science, and one-third to the fundamentals of engineering. The engineering electives should be devoted to such courses as structural, railroad, and highway engineering, and branches of civil engineering upon which the practice of highway engineering is founded. The limits of this paper do not permit of a discussion of the relative advantages of all the combinations of courses offered by American colleges and universities. Attention will be confined to the four-year civil engineering courses, taken by the majority of men looking forward to a career as a highway engineer and to graduate professional courses in highway engineering.

The concensus of opinion of eminent highway engineers and educators is to the effect that the highway engineer of the future requires the board engineering foundation which is obtained from a well-rounded, four-year course in civil engineering rather than a specialized training which would be acquired through the medium of a four-year undergraduate course in highway engineering. A knowledge of practically all of the subjects included in a civil engineering course is found of value in the manifold duties imposed in the various positions which he may occupy in the service of municipalities, States, counties, towns, estates, contractors' organizations, consulting engineers' offices, and manufacturing companies.

The importance of the subject of the economics, the administration, and the construction and maintenance of roads and pavements demands that more prominence should be given to the course in highway engineering in civil engineering curricula. Having in mind the various component parts which go to make up the curriculum, it appears that a well-balanced civil engineering course, under present conditions, should contain a three-hour per week course of one year in length devoted to highway engineering.

Three objects should be kept in mind in teaching highway engineering. These objects may be stated as follows:

(1) To familiarize the student with the fundamental principles of highway engineering.

(2) To give him the mental equipment to enable him to apply these fundamentals to problems arising in the practice of highway engineering.

(3) To give him a thorough training in the methods of securing information of value through the medium of inspection of highway work, and research in treatises, reports, proceedings of engineering societies, technical periodicals, and trade catalogues.

In a one-year course of three hours a week, lectures and textbook work should cover the following topics: Historical review of the construction of roads and pavements; preliminary investigations incident to construction; principles of surveying and mapping peculiar to highway work; design of highways; drainage and foundations; construction and maintenance of earth, sand, clay, gravel, and broken stone roads, including a consideration of the materials which enter into their construction; general consideration of bituminous materials as such and their use in the construction of bituminous surfaces and bituminous pavements; the construction and maintenance of wood block, stone block, brick and cement-concrete pavements; street cleaning and snow removal; comparison of roads and pavements; construction of sidewalks; highway structures; and a general treatment of economics, highway administration, organization and legislation.

Laboratory work should be limited to lecture demonstration work by the officers of instruction. In other words, although it is advisable that the methods of deter-

mining the properties of bituminous and nonbituminous highway materials should be brought to the attention of students by actual demonstrations in the laboratory or lecture room, it is not considered advisable to devote the time necessary for each student to run through complete tests. In two to five afternoons the fundamental tests employed in the examination of bituminous and nonbituminous road materials could be demonstrated if the laboratory equipment were properly arranged and the work well planned out. A limited number of inspection trips covering the economics of highway location, and the construction and maintenance of various types of roads and pavements will be of value.

After a man has secured his fundamental education in engineering and has had a certain amount of practical experience in highway work, the opportune time has arrived for securing professional equipment through the medium of graduate courses in highway engineering. The fundamentals of graduate work in highway engineering have been developed in a one-year graduate course which has been in operation at Columbia University for the past four years. A description of the Columbia course will serve to emphasize the educational features of graduate work in this field of engineering which are essential if such work is to be successfully conducted under American conditions.

In 1911, there was founded at Columbia University the graduate course in highway engineering leading to the master's degree. The object in founding this course was to elevate the profession of highway engineering to the plane of the National Department of Roads and Bridges of France and to provide an opportunity for men engaged in highway work to obtain advanced instruction and training in its various phases under the most favorable conditions. For many reasons it is fortunate that the first course of this character was established at a university presided over by a president and trustees who look upon the work of the university from an exceptionally liberal standpoint. While maintaining the high character of all degrees conferred, nevertheless these men believe in opening the courses of instruction to any mature man provided he has the prerequisites for any given course and earnestly seeks information. Likewise it is fortunate that the administrative authorities allowed the introduction of an innovation as far as the period of attendance is concerned inasmuch as the graduate course referred to is given in the period from December 1 to April 1. Furthermore, all lecture and laboratory courses are given in periods of from two to three weeks. This arrangement permits men particularly interested in certain subjects to take any course or group of courses, the prerequisites for which they are able to present. An engineer, chemist, contractor, or engineer salesman, who desires to take all the graduate courses in highway engineering and allied subjects which fulfill the requirements for the master's degree, will necessarily be in attendance for two winter periods or the equivalent thereof. The selection of this period in which to give this instruction was based upon the prevailing idea among leading highway engineers that it would be feasible for many men to obtain a leave of absence of from one month to four months during the dull period of the year. This prediction has been found to be correct.

The courses of instruction have been planned so as to deal with the subjects only from the standpoint of the highway engineer and are so coordinated as to follow each other in logical order without any duplication of subject matter. The content of the courses is sufficiently broad to cover all phases of highway engineering, thus providing the engineer with a foundation which will prepare him to assume the duties of any administrative or engineering position connected with highway work. The work expected of the students is of an entirely different character from that usually required of undergraduates. Instruction is given by means of lectures in which the theoretical and practical side of the subject and its bibliography are set forth, and in the seminars and laboratories, the men are trained in research work and the presentation of results.

The curriculum of the graduate course in highway engineering comprises advanced courses in administration; organization; highway jurisprudence; economics and de-

sign of roads and pavements; management engineering; planning of highways and highway systems; construction and maintenance of all types of roads and pavements; mechanical appliances used in highway engineering; highway structures; chemistry of bituminous materials; engineering geology and petrography; laboratory research courses in bituminous and nonbituminous highway materials; and seminar courses devoted to a review of engineering literature and the preparation and presentation of reports, papers, and addresses.

The several graduate courses are given by a special corps of permanent instructors and a staff of 25 nonresident lecturers in highway engineering which includes many of the most prominent highway engineers and chemists in the United States.

The present status of highway engineering education in America is comparable to the standing of the work of the highway engineer in the mind of the American lay public and to a greater or less extent in the opinion of the engineering profession. The nonrecognition by legislators of the necessity of placing the control of the administration, construction, and maintenance of highways in the hands of well-educated and efficiently trained highway engineers is reflected by the expressed attitude of educators in the allotment of the small amount of time which is devoted to undergraduate work in highway engineering in our universities. The waste of millions of dollars annually in the United States will continue until the profession of highway engineering is placed on the same basis as structural, hydraulic, sanitary, and kindred branches of civil engineering. In England, France, and other European countries where the public recognizes highway engineering as a learned profession, efficient highway engineers are retained in office, organizations are perfected, methods of construction and maintenance suitable for local conditions are employed and as a consequence the public funds are wisely and economically expended.

METHODS OF TEACHING CERAMIC AND CEMENT TECHNOLOGY.

By ARTHUR S. WATTS,

Ohio State University, Columbus, Ohio.

The technologies of the ceramic and cement industries are so closely allied in their fundamental conceptions, that up to the present time the same preparation has been prescribed for both in the Ohio State University. Both industries have been classified as coordinate branches of chemical engineering. The chemical engineering of cement manufacture demands chiefly a knowledge of the fusion behavior of the very basic silicates, but this phase of the subject is necessarily covered in a general manner in teaching the fundamentals of all silicate chemistry. The number of graduates of the ceramic engineering course that have gone into cement factories is comparatively limited, however, and as the demand for men for this industry increases, a more highly specialized course of training will doubtless be furnished.

The field of the clay industries is so broad and varied, that a demand is already indicated for a division of the subject into at least four distinct courses, viz:

Crude ceramics, as applied to building and paving brick, sewer pipe, drain and roofing tile, and the many other clay products in the manufacture of which the application of mechanical engineering principles for securing rapid and economic production is essential. Variations of quality in such products can usually be better borne than variations in cost. The decoration on such wares is confined to regulating the surface texture of the mass and to securing such colors as may be found in natural clays or by manipulation of the burning process.

Architectural and majolica ceramics, as applied to terra cotta, enameled bricks and tiles, and crude forms of pottery. These products are usually decorated with opaque coatings, which may be vitreous or porous, or bright or dull, and of polychrome tints

The severe demands of the architects as regards the mechanical properties and the color effects and surface decoration of the clay products used in the modern steel skeleton building, has developed a large demand for ceramic engineers highly trained along these lines.

Fine ceramics, as applied to art and domestic porcelains, electrical insulators, wall and floor tiles, and art pottery. The production of these wares demands a special knowledge of white burning ceramic materials and their compounding, since the body of the wares must be vitrified in most cases and under rigid requirements as to size, straightness, etc., in all cases. The decorations are also subject to a much more critical and close inspection. Most of the important pottery plants are still operated under the supervision of men who have spent many years as assistants and apprentices to their predecessors. The trained ceramic engineer can doubtless master the subject in a much shorter time than is possible when the man has not the proper fundamental training, but the period of shop training after finishing at school is so long, and the amount of detailed knowledge to be communicated is so great, that the managers of these industries have generally preferred to train their sons or relatives, and there are thus far fewer ceramic graduates in this division than the others.

Refractory materials, covering the linings of high temperature furnaces for the manufacture of steel and other metals, the fusion of glasses and enamels, the linings of kilns and furnaces for clay wares, cements, steam boilers, etc. This branch of ceramics also includes the manufacture of artificial abrasive materials, and their incorporation into grinding wheel by the employment of vitrifying bond.

The manufacture of glass in its many different forms, and the manufacture of enamels for cast iron, sheet steel and other metals are also inferentially included in the ceramic field, but are not covered by the foregoing subdivisions. The courses of study and methods of teaching, as outlined in the following presentation are believed to fit a student to enter these industries and to handle their problems, as well as those of the cement industry, with entire success, and more rapidly than ordinary courses in chemistry or chemical engineering in which silicate work is a minor or subordinate part.

At the Ohio State University, where for the past three years the writer has been engaged in teaching ceramic engineering, the curriculum is as follows:

OUTLINE OF THE FIRST YEAR'S WORK OF ALL FOUR-YEAR CURRICULA.

In order to permit all engineering students to have a year in which to find out definitely what courses they desire to pursue, the first year of all engineering curricula is made uniform. While students are asked to indicate their choice on entering the college, they can change at the end of the first year without any inconvenience.

NOTE.—The figure in parenthesis following the name of each study indicates the number of the study in its department; the other figure indicates the number of credit hours.

FIRST SEMESTER.		FIRST YEAR.		SECOND SEMESTER.	
Mathematics (131).....	5	Mathematics (132).....	5	Mathematics (132).....	5
College algebra and trigonometry.		Trigonometry and analytics.		Trigonometry and analytics.	
Chemistry (105 or 100) ¹	4	Chemistry (106 or 110) ¹	4	Chemistry (106 or 110) ¹	4
General chemistry.		General chemistry and qualitative analysis.		General chemistry and qualitative analysis.	
Modern language.....	4	Modern language.....	4	Modern language.....	4
French, German, or Spanish.		French, German, or Spanish.		French, German, or Spanish.	
English (101).....	2	English (104).....	2	English (104).....	2
Paragraph writing.		Paragraph writing.		Paragraph writing.	
Engineering drawing (101).....	2	Engineering drawing (102).....	3	Engineering drawing (102).....	3
Elementary mechanical.		Lettering and projections.		Lettering and projections.	
Military drill.....	1	Military drill.....	1	Military drill.....	1
Physical education.....	1	Physical education.....	1	Physical education.....	1

¹ Students presenting chemistry as an entrance subject will take chemistry 100 and 110. Students with no entrance credits in chemistry will take chemistry 105 and 106.

FIRST SEMESTER.		SECOND YEAR.		SECOND SEMESTER.	
Mathematics (141).....	5	Mathematics (142).....	5		
Calculus.		Calculus.			
Physics (112).....	3	Physics (111).....	3		
Electricity, light, and sound.		Mechanics and heat.			
Engineering drawing (104).....	3	Engineering drawing (108).....	3		
Machine sketching.		Descriptive geometry.			
Ceramic engineering (102).....	4	Ceramic engineering (101).....	4		
Laboratory.		Ceramic chemistry.			
Ceramic engineering (142).....	3	Ceramic engineering (141).....	3		
Clay wares.		Clays.			
Military drill.....	1	Military drill.....	1		

FIRST SEMESTER.		THIRD YEAR.		SECOND SEMESTER.	
Mechanics (101).....	5	Mechanics (104).....	2		
Statics and strength of materials.		Strength of materials.			
Chemistry (157).....	3	Chemistry (158).....	3		
Physical chemistry.		Physical chemistry.			
Mine engineering (103).....	4	Civil engineering (124).....	3		
Mine surveying.		Trusses.			
Ceramic engineering (143).....	3	Ceramic engineering (144).....	3		
Drying and burning.		Decoration of clay wares.			
Ceramic engineering (105).....	2	Ceramic engineering (108).....	3		
Calculations.		Physical chemistry measurements.			
Mine engineering (109).....	1	Mechanical engineering (110).....	3		
Mine trip.		Mechanism and design.			

FIRST SEMESTER.		FOURTH YEAR.		SECOND SEMESTER.	
Ceramic engineering (111).....	5	Ceramic engineering ¹ (112).....	5		
Laboratory.		Laboratory.			
Ceramic engineering (113).....	5	Ceramic engineering (114).....	5		
Drawing.		Drawing.			
Geology (165).....	3	Ceramic engineering ¹ (118).....	5		
General geology.		Cement lectures.			
Metallurgy (117).....	2	Civil engineering (118).....	3		
Fuel.		Cement and concrete.			
Metallurgy (119).....	2	Ceramic engineering (116).....	4		
Iron and steel.		Thesis.			

For the purpose of making this more intelligible, and to explain the methods of teaching the ceramic subjects in this curriculum, the following explanations are given. The general arrangement of the curriculum is the result not only of the demand for the special knowledge of ceramics, but of the experience of the faculty of the college of engineering in training young men to enter any branch of industry based upon applied science. Sixty-five per cent of this curriculum is fundamental training applicable to any engineering degree. Thirty-five per cent is more or less clearly specialized to suit the needs of the future ceramic engineers.

Entrance.—The student must have for entrance to the ceramic engineering course credit for 15 units representing 120 clock hours each. These entrance credits are distributed as follows: Not less than three in English; three in mathematics (including solid geometry); one in physics; four in languages other than English; and the remaining four may be in any field of learning, but must be approved by the university entrance board.

First year.—The first year of college work consists of mathematics, modern language, English, engineering, drawing, and chemistry. The latter is a beginning course, which includes qualitative analysis by the end of the year. No courses in ceramics are begun in this year. The work is identical with that for all other engineering degrees.

¹ Alternative courses. One must be taken.

Second year.—The general work of the second year consists of advanced mathematics (calculus), engineering, drawing, and college physics, including laboratory. The special work consists of a second year of chemistry and lectures upon ceramics. The chemistry is quantitative analysis, and the materials upon which the student practices are ceramic materials and ceramic products arranged in the following order: Limestone, clays, flints, feldspars, porcelains, uncolored glasses, uncolored raw-lead glazes, uncolored fritted glazes, colored glasses and colored glazes. If the student so elects, special analytical work in cements may be substituted for a part of the other materials.

The lectures on ceramics begin with the origin, occurrence, and physical properties of clays and other minerals used extensively in ceramic operations. This is followed by lectures, illustrated by lantern projections, explaining the processes of winning and mining clays and the other ceramic materials. This leads to a discussion of the processes of preparation of clays for manufacture, including the making of mixtures of natural clays and minerals into artificial bodies. These discussions are supplemented by illustrations with lantern, and demonstrations by the instructor in the departmental laboratories.

The processes of forming the prepared clay into ceramic wares are next taken up. These are taught by lectures, lantern projections, and demonstrations in the departmental laboratories. In addition, a number of visits are made to typical clay-working plants in Ohio and adjoining States where the processes of preparing and forming the clay are studied and reported on separately by each student. This completes the second year's work.

Third year.—In the third year the mathematics work is extended in a drill on analytical mechanics and strength of materials. A course in roof trusses and simple bridge design and a course in surveying are also given by way of amplification of the mathematics, and to increase the student's power to use mathematics in his work. In this year the chemistry courses and the ceramic work both assume an increasingly practical character. The ceramic work for the first half year begins with a lecture course in drying and burning ceramic wares, dealing with them from the moment of their receiving their form until ready for market. Special attention is given to the physical theory of drying, to the prevention of warping and cracking, the control of humidity, and the source of the heat and its most economical utilization. Under burning is discussed the principles of combustion, the use of solid, liquid and gaseous fuels, the various types of furnaces for burning these fuels, and the proper regulation of the various stages of the firing process in order to insure the highest quality of ware. Here also are considered the principles involved in the design of the various types of kilns, including the periodic varieties of updraft, down draft, combination up-and-down draft, and horizontal kilns, and the continuous and semicontinuous. Special consideration is also given to the various systems of placing the wares in the kilns to insure a satisfactory heat distribution. The use of the various devices for temperature control and heat distribution including draft gauges, and the various types of pyrometers, are explained. Special attention is given to the subject of recording draft gauges and recording pyrometers, demonstrations being given with the various instruments in the drying and burning laboratories of the department. For illustrating and explaining the theory of burning and kiln design, models of the various types of kilns, so constructed that they can be readily taken apart and the interior parts exposed and measured, are used. Wall charts and lantern projections are also employed for presentation of designs of driers and kilns not in general use, but nevertheless representing theories of sufficient importance to demand consideration.

The course in chemistry for the third year takes up physical chemistry. This is coordinated with the foregoing courses in ceramics. Special attention is given to the principles of colloid chemistry, now being applied to the control of plasticity of clays, and to the principles of geophysical-chemistry now being applied to the

control of silicate fusions. The theoretical course is followed by a laboratory course, in which the student is given practical experience in the determination of specific gravities of the various ceramic materials and products, volume changes and porosity measurements, control of viscosity of clay slips, and determination of the relative plasticity of clays. The behavior of colloids and electrolytes in clays are also studied in the laboratory. Under heat changes, the pyro-chemical behavior of silicates, showing the processes of solution and recrystallization, and the development of new compounds, and the operation of eutectic mixtures are carefully gone over.

Coordinate with these lecture and laboratory courses is given a course of ceramic calculation, such as those encountered in the compounding of clay bodies, cements, glasses and glazes, and in designing of series, with two and three variables for the most effective study of the influence and behavior of the different ingredients. This course also includes the calculation of calorific power, calorific intensity, and heat balances of kilns and driers.

In the second half of the third year the lecture course takes up bodies and glazes and decoration of clay wares. These lectures begin with the explanation of the results of heat application to the various simple ceramic materials. Next the compounds of two and three materials are taken up and finally the more complicated compounds of ceramics are explained, so far as they have been mastered. The order followed is as follows: Porous natural clay bodies, vitreous natural clay bodies, porous artificial bodies, vitreous artificial bodies, the regulation of color of clay bodies by means of blending different clays, and by introducing powdered or granulated colorants and by special heat treatments. The fundamental principles of the manufacture of glasses are next presented, and followed by their application as the superficial decoration of clay wares. The order of presentation is: Vapor glazes, natural clay glazes, bristol glazes, porcelain glazes, raw lead glazes, fritted glazes. Each type is presented first in its transparent and colorless form and this is followed by the consideration of colorants suited for such a glass. The preparation of colorants for overglaze and underglaze decoration is next presented.

The course closes with a series of lectures on the methods employed in decorating with gold, and the production of special artistic effects by special treatments. Examples of the various glaze materials, glazes and decorations are employed to aid in the presentation of this course.

Fourth year.—The fourth year contains only two courses of nontechnical nature, viz, a short course in the metallurgy of fuels, and of iron, and an elementary course in geology. The latter includes a little field work and the occurrence and age of the clay formations of Ohio are observed. This is supplemented by the clay beds which are visited in the factory inspection of the third and fourth years.

The ceramic work comprises two parallel lines, viz, the development of the design and construction of clay plants and the opening and working of clay beds, which is civil and mechanical engineering applied to the clay industry, and practice in the testing of clays and making wares from them, which is the extension and logical goal of the chemical training already given.

The engineering course includes the design, estimation of cost of construction and preparation of specifications for the various types of buildings, kilns, and driers. The knowledge gained in this work is finally employed in designing complete clay-working plants, in which moderation of first cost, together with economy and efficiency of operation and maintenance are the objects sought.

The department is provided with a very efficient laboratory, whose equipment includes the various types of machines for crushing, cleaning, grinding, sizing, mixing, modeling, drying, glazing, and burning. In this laboratory each student spends approximately one-third of his time for the fourth year.

The senior laboratory course begins with a study of the identification and valuation of clays. Unknown samples are assigned, and the student is required by means of

physical and fire tests, to not only identify the clay but to prescribe the proper treatment for the development of its greatest industrial value. The next exercise is the preparation of a crude clay for use in modeling or molding ware, each student later using the clay prepared in manufacturing actual ware, either brick, tile, or pottery, according to which the properties of the clay may indicate it to be best suited. Incidentally the working of plaster of Paris now receives consideration, as each student needs molds in which to form his ware and must prepare them for himself.

The compounding and preparation of white clay bodies are next studied, the entire range of compositions and temperature being covered. Various series are assigned to groups of three students, the investigations being planned in three variable series. The results of the whole class are then collected, and studied in seminar, every student contributing something and receiving in return the benefit of the work of all of his fellows.

The manufacture of refractory wares, as fire brick, muffles, and saggars is next studied. Each student is assigned a fire clay of which he must determine the refractory value, the working properties and the resistance to distortion with repeated heat treatment under load. For this purpose each student must calcine part of his assigned clay, and crush to various sizes. Mixtures of various proportions of the raw and calcined clay are then made into standard laboratory saggars, and used for the burning of the various wares. Warping and cracking tendencies are considered and also drying efficiency and the results tabulated for the use of the entire class. From the data obtained, the most desirable mixtures for saggars, muffles, and fire brick are chosen and these choices are tested and the decisions confirmed by subsequent tests.

Instruction, demonstrations, and actual practice in kiln firing are provided in the firing of the different series of clay products. In each burn, students are assigned to have charge and are held responsible for the results obtained. Every kiln burned is equipped with draft gauge, thermocouple, and recording galvanometer, pyrometric cones, and shrinkage discs, so that ample practice in using these guides in kiln firing is provided. For efficiency of operation, the exercises on mold making and sagger making are carried on over a long period, so that the students may occupy spare time. After completing the study of whiteware bodies, glaze making is begun. The first one undertaken is the Bristol glaze. This is investigated from two viewpoints, viz, the chemical formulæ and the supposed mineralogical norms. The work is divided into series and apportioned to groups of three students each, who design their study on a three variable plan. Provision for trials on which to apply the Bristol glazes was made by preparing an excess of stoneware clay trials when clays of that class were being studied. The Bristol glaze studies are burned in both gas and coal fired kilns, since the firing treatment has a distinct influence upon the appearance and physical properties of these glazes. The results obtained are studied in seminar by the entire class. The range of colors possible in Bristol glazes is next studied, and the application of white or colored engobes between the body and the glaze is also studied here, since this practice is common in terra cotta and cooking wares, for which stoneware clays and Bristol glazes are extensively used.

Porcelain glazes are next taken up, the methods followed being as in the Bristol glaze study. The porcelain body trials made during the study of whiteware bodies are now employed in this study. The variation in vitrification temperature, due to the variation in composition of the porcelain trials provides a wide range of temperatures of maturity and this same range of temperature of maturity exists in the porcelain glazes, so that with care a glaze may be chosen to fit every body. The comparison of low-fire biscuit vs. single-fire is made by biscuiting specimens at low temperature prior to glazing. European vs. American factory practice is thus compared. Finally the coloring of porcelain glazes is demonstrated by introduction of the metallic oxides into those glazes which have previously been proven adaptable.

The raw glazes using lead oxide are next studied. The application of this group of glazes to colored wall tile, cheap majolica, red clay cooking ware and so many other products makes its study especially important. The range of permissible variation is studied in the same manner as was followed in the previous studies. Unglazed wall tile, secured in quantity from a reputable manufacturer, is used for studying this type of glaze, as the production of an adequate quantity of this sort of ware would involve too much labor for the students. The color possibilities of this type of glazes is enormous, and involves a study of all the metallic oxides which form colored silicates.

Fritted glazes with and without lead oxide are next studied in a manner similar to that followed in previous studies. This type of glaze has a more restricted application, and the permissible limits of variation are much narrower, but the fact that it is used on the most expensive wares demands that its study be very thorough. The chief applications of this type of glaze are for white wall tile, for table wares, and for fine faience. The test pieces employed are, therefore, wall tile, and small dishes secured for this purpose in the unglazed state. Fritted glazes are sometimes tinted but rarely highly colored, and this demands a separate study from that called for in raw lead glazes, although the range of temperatures for these types of glazes are very similar.

The manufacture of ceramic colors, to be applied under and over the glaze is taken up and each member of the class must produce a satisfactory color.

Library references dealing with the various subjects being studied are assigned with each exercise so that no time need be lost, which would be the case otherwise as a wide difference in speed and efficiency exists among the members of every laboratory class. In all the laboratory work described, which runs through the entire year, quality as well as quantity of work done is very carefully considered. An unsuccessful burn requires that the men responsible shall repeat the burn, without credit for the time occupied, until a successful burn results.

For those students who elect it, a course in cement manufacture is also offered, consisting of lectures and demonstrations covering hydraulicity, compounding, manufacture and testing of natural and Portland cements and other hydraulic bodies. This course may be substituted for that portion of the laboratory course just described which deals with glazes. A laboratory equipment consisting of apparatus for mixing, burning, and grinding cement clinker is installed in the department for this course.

A thesis, required of each student as a requisite to graduation, consisting of an investigation, designed and carried to completion by the student, uses a considerable part of his time for the last few months of his course. The subject must be strictly within the field of ceramic engineering, and the report of the work done and results obtained must be presented in a typewritten and bound form, and be approved by the head of the ceramic department before graduation will be considered by the faculty and trustees of the university.

The foregoing is an outline of the course of instruction in ceramic engineering as now conducted. Additional courses, dealing with the technology of glass manufacture, and of enameled metal ware manufacture, have been given from time to time, but always as special work for maturer students. Such courses in glass and enamel manufacture could be combined to advantage, and given as an alternative for the entire laboratory course in bodies and glazes, but this is not yet regularly done.

The object of the curriculum is distinctly professional. It does not give or pretend to give manual skill in any of the practical arts of clay modeling, forming or decorating. It is a study of the technology—the engineering, both civil, mechanical and chemical—which is used in the clay and allied silicate industries.

The recipient of such a course is trained as an engineer first and as a ceramic specialist second. In the special work the constant effort is to make this work the medium

for the development of logical power, initiative and ability to use the principles of sound engineering and sound science.

The course has never been popularized by leniency as regards requirements. On the contrary its severity has caused it to be looked on with suspicion by most students.

Those students who have completed the course have been notably successful. At a recent gathering at which about forty ceramic engineers were present and which was only representative as regards the standing of the men a canvas was made as regards earning ability. The result showed 3 men receiving \$4,000 or more per year, 8 men \$3,000 to \$4,000 per year, 5 men receiving \$2,500 to \$3,000 per year, 4 men receiving \$2,000 to \$2,500 per year, 14 men receiving \$1,500 to \$2,000 per year, 3 men receiving \$1,000 to \$1,500 per year, and 2 men receiving less than \$1,000 per year. Seven of these men had been graduated two or three years and 2 had been graduated less than one year. The average time out of college was seven years and the average salary was \$2,667 per year. The average age at graduation was 24.1 years.

In the 21 years of the existence of the department, 98 men have been graduated. The largest class consisted of 14 men. For several years the number of graduates has been 6 to 9 men.

The classification of the graduates as regards branches of clay working in which they are engaged shows: Crude ceramics, 32; architectural ceramics, 14; fine ceramics, 13; refractory wares, 13; cement, glass and metal enameling, 7; special branches of ceramics, including executives and teachers, 12; graduates who are not engaged in ceramics or allied work, 7.

Ceramic engineering is gaining increased recognition from year to year and many branches of clay working which refused recognition to college trained men have, within the past few years, come to depend upon ceramic engineers almost exclusively for technical control of their plant operations.

The demand for ceramic specialists is not supplied exclusively by Ohio State University. The University of Illinois at Urbana, Ill., and Iowa State College at Ames, Iowa, have courses in ceramic engineering. The New York School of Clay Working at Alfred, N. Y., and the New Jersey School of Clay Working at New Brunswick, N. J., have ceramic courses, but are not equipped to furnish all of the associated engineering training given in the engineering colleges of State universities. Several other universities and colleges give limited instruction in ceramics in connection with other courses.

The American Ceramic Society founded in 1899 for the dissemination of ceramic knowledge has grown from a membership of about 20 to more than 500 active and associates. The annual publication of ceramic researches has grown from about 100 pages to a volume averaging more than 800 pages with a proportionate increase in the technical quality of the contents.

Ceramic engineering is firmly established as an applied science. Its influence upon the clayworking industries of the United States is becoming more pronounced each year, and in the minds of discerning observers, the time is not far distant when it will have as important a place in the engineering world as is now enjoyed by civil, mechanical, electrical, and mining engineering.

METHODS OF TEACHING CHEMICAL ENGINEERING.

By M. C. WHITAKER,

Professor of Chemical Engineering, Columbia University, New York.

The conversion of the natural resources of a country into useful materials and the synthesis of products of value from wastes are the most fruitful means of creating both

individual and national wealth. Thus it is that the economic stability and the prosperity of any nation are rated by the variety, degree of development, and extent of its manufacturing industries. Industrial development is now assuming a new and supremely important significance, since the daily lesson to be drawn from the war in Europe points with incisive clearness to the manufacturing industries as being most essential and most vital factors, not only in maintaining commercial independence, but also as the foundation upon which depends national self-preservation. A nation without a well developed and evenly balanced industrial system extends a standing invitation to the foreigner to come in and exploit its resources, and it may even be marked for political annexation in times of great international upheavals.

Chemical science is now becoming recognized as the foundation upon which many of the most important and most fundamental manufacturing industries depend. This dependence is not always apparent to the layman although it has long been well known to the technologist.

The education of men who will ultimately direct those manufacturing processes based upon the applications of chemistry, is undoubtedly one of the most important special problems for the modern technical school. Efficiency and stability in industry will exist in direct proportion to the degree of success attained in the technical education of young men to manage the great manufacturing plants of the country. Modern chemical industry calls for a class of men whose scientific knowledge and engineering talents have been developed, and who have been trained to apply engineering methods to production operations rather than to look upon such manufacturing processes simply as elaborations of laboratory methods and appliances. This places a great burden of responsibility upon the educators who plan the courses and give the instruction to men for service in our industries.

The training of chemical engineers has been a much-discussed subject in recent years, especially among members of the chemical profession. There are those who are content to end their instruction with the test tube and the beaker, and varnish over as immaterial or unimportant the stupendous engineering problems which lie between the laboratory reactions and their successful industrial applications. The supporters of this view are largely recruited from those chemists who have had little or no experience in industrial development. They speak without knowledge of the problems involved or experience with the quality or kind of talent required in their solution, and are unable to draw obvious conclusions from a review of the history of the struggles invariably encountered in developing industrial processes.

On the other hand, there are those members of the profession who know by experience, often gained after leaving college, at great expense in both time and money, that the highest type of training and talent is required for the elaboration of chemical principles into chemical processes, just as it has been required to adapt the principles taught in physics and thermodynamics to the great achievements of the mechanical engineering profession.

The chemist, with characteristic conservatism, has been slow to recognize the point at which the laboratory study of chemical principles ends, and the problems of engineering application begin. He has maintained that the teaching of the principles of chemistry and physics was sufficient training for the men going into chemical industry, and that such men would get the "industrial application", from the industries themselves. As a consequence of this view, thousands of young men have been sent into chemical plants, who have never seen, to say nothing of never having used, the most common works equipment, such as filter presses, vacuum pans, stills, pumps, siphons, furnaces, etc., who have never carried through an industrial cycle of operations, or who have no conception of the methods of attacking a problem involving operating losses and gains, volume and output, cost and control, materials of construction, or the elements of industrial principles. The plight of these men entering a factory is comparable to that of a mechanical engineering graduate who might go into his field

well trained in mechanics and thermodynamics, but without ever having seen a steam engine, gas engine, boiler, pump, turbine, or a compressor; and never having had a chance to study the applications of physical science, in combination with the principles of engineering operations, to the fundamental tools of his trade.

For 30 years professors of physics maintained that there was no need of schools of electrical engineering because physicists could and did teach the principles of electricity and magnetism, and that that was all that was necessary for industrial work. It is a significant fact that during that time the profession of electrical engineering and the electrical industries made no important advances. It was not until the facts and principles taught in physics were balanced with the facts and principles of industry, which are fully as numerous and fundamental as those of science, and the two brought together by self-made electrical engineers for the solution of each problem from the standpoint of its composite scientific and engineering needs, rather than from its single-phase scientific requirements, that the real progress in this profession began. This policy soon led to the modern electrical engineering school, which has placed America at the head of the world's achievements in this industry.

Training in chemistry and physics and other fundamental sciences is an essential groundwork upon which to build the training of chemical engineers, but such training alone, unsupplemented by thorough and comprehensive instruction in the correlation of these fundamentals with the principles of industry, will not make a chemical engineer any more than courses in mineralogy and geology alone will make a mining engineer, courses in electricity and magnetism an electrical engineer, or courses in trigonometry and strength of materials a civil engineer.

Chemical engineering courses must eventually teach men to use engineering methods, engineering appliances, and the facts and principles of industrial experience in solving industrial chemical problems and carrying on chemical processes. These engineering requirements are not to be found in the test tube, beaker, or funnel of the chemical laboratory any more than steam, hydraulic and electric machinery, and methods of application are to be found in the physics laboratory. Mechanical and electrical engineers long ago recognized the difference between the equipment and environment needed for studying the application of the fundamental scientific principles to engineering problems, and the conditions surrounding the study of laws and principles. Laboratories, equipped with mechanical and electrical engineering appliances, have been established for many years to meet these needs, but the corresponding chemical engineering laboratories have been sadly lacking.

Many schools have not met the problem of chemical engineering education with the open, frank, logical analysis its importance seems to deserve. They have avoided the real issue by doctoring up the course in chemistry with a few minor changes in the direction of engineering, or in some cases simply by changing the name of the course from that of chemistry to that of chemical engineering. They have done little or nothing in the way of developing laboratories for instruction and research in chemical engineering, comparable with those so long and successfully used in mechanical, electrical, and metallurgical engineering.

It is a recognized fact that the rapid advancement in all engineering sciences has put a heavy burden on the student. The time allotted (usually four years) has remained constant, while the ground to be covered has been greatly increased. The high schools have endeavored to keep pace with the more severe requirements of the technical-school entrance examinations, but these preparatory schools seem also to have reached their limit and are no longer able adequately to prepare young men to complete a thorough engineering course in four years without undue strain.

There are but two possible methods of solving the time difficulty: (1) a reduction in the amount of material presented in the technical course, or (2) an increase in the time to be devoted to post-high-school training. In many technical courses the academic

subjects are being eliminated from the curriculum to the great loss of the student's general scholarship; in other institutions fundamentals are superficialized to such an extent that the graduate lacks the necessary foundation on which to develop; in still other engineering courses, cultural and fundamental subjects are retained and engineering applications neglected. The obvious remedy to meet this deplorable situation is to give the student more time and better facilities in order to fulfill the present demands.

The problems of chemical engineering education have been given the most careful study by the engineering faculty of Columbia University. Prominent engineers have been consulted freely and the entire question has been approached on its broadest and most comprehensive basis. It is felt that a distinct advance has been made and a brief outline of the courses of instruction which have been adopted, and the laboratory facilities which have been provided for the training of chemical engineers, may be of interest.

The chemical engineering course at Columbia University is now a post-graduate professional course and will require at least three years of approved collegiate or scientific school preparation, or its equivalent, for admission. The purpose of this increase in entrance requirement is not only to provide better and broader general and fundamental scientific training for the students, but also to place the work upon the same high professional plane as that of law and medicine. It is a significant fact that for several years nearly 20 per cent. of the students in the engineering schools at Columbia were college graduates, and therefore really post-graduate students.

The college training, taken as a preliminary preparation for this new post-graduate course, must necessarily include physics, chemistry, and fundamental mathematics, in addition to the usual college courses. A properly arranged curriculum, somewhat along the lines of that suggested below, may be completed in three or four years.

PREPARATORY TRAINING.

CHEMISTRY.

General chemistry.—A continuation of the study of general chemistry, with particular reference to descriptive chemistry, and a more advanced and systematic discussion of the general principles and their applications. It affords also the necessary preparation for qualitative analysis.

Qualitative analysis.—This course deals with the theory and practice of inorganic qualitative analysis, based upon the principles of modern chemistry.

DRAFTING.

(a) Elements of mechanical drafting—Use of instruments; plane problems; free-hand lettering; dimensioning; (b) Projections—Orthographic projection; intersections; developments; problems in descriptive geometry; isometric projection; cabinet projection; (c) Machine drafting—Conventional signs for materials of construction; sketching of machine details. Working drawings; tracings; blue printing; (d) Topography—Conventional signs; hill shading; mapping.

DESCRIPTIVE GEOMETRY.

Problems on point, line, and plane; classification of surfaces; tangent planes to single curved surfaces and surfaces of revolutions; intersections; developments; warped surfaces.

ENGLISH.

English A.—Review of principles of English composition, developed in individual conferences. Assigned weekly readings and classroom discussion.

English B.—A course of intensive study of representative English authors. Reports on reading and classroom work at fortnightly intervals.

HISTORY, ECONOMICS, AND POLITICS.

History A; Modern history.—A fundamental course in the politics and society of modern times; treats of the commercial revolution of the sixteenth century and of the industrial revolution of the eighteenth and nineteenth centuries; and lays special emphasis upon current national and international problems in Europe and in the United States.

Government and industry.—A course designed for students who wish to gain an insight into their duties and responsibilities as citizens, and knowledge as to the relations of government and industry.

Government and industry.—Lectures, reading, and textbook discussion. In this course the fundamental principles of economics are studied, with particular reference to their application to current economic and social problems in the United States, and with special regard to the needs of students in engineering.

MATHEMATICS.

Algebra.—This course deals with such topics as permutations and combinations, determinants, complex numbers, the theory of equations, and partial fractions.

Analytical geometry.—This course deals with such topics as coordinate systems, transformations, loci and their equations, with particular reference to the straight line and conic sections, and the elements of three-dimensional geometry.

Calculus.—First course in differential and integral calculus.

Calculus.—A continuation of the above, with further applications to geometry, physics, and mechanics, and an introduction to differential equations.

MINERALOGY.

General mineralogy.—The character and laws of minerals and crystals. The sight recognition and determination of the common rock-forming minerals and the great ores.

MODERN LANGUAGES.

French.—Practice in speaking and writing French, French history and scientific French. Courses are conducted entirely in French.

The work consists of summing up notes taken in the classroom, making oral reports on assigned reading, and writing weekly French compositions based on the work done during the week.

German.—A special course in scientific German based on the intermediate entrance requirements.

Spanish.—By special permission a student with good linguistic training may offer Spanish instead of French or German.

PHILOSOPHY.

The principles of science. The first half of this course is devoted to a study of the elements of logic, inductive and deductive, with practical exercise in the application of logical principles. The second half considers the application of these principles in scientific investigation, and includes a careful examination of leading scientific concepts, such as matter, energy, cause, law, purpose, evolution, etc.

PHYSICAL EDUCATION.

Elementary graded gymnastics, athletics, swimming, and lectures on personal hygiene.

PHYSICS AND MECHANICS.

Physics.—General physics: Mechanics, wave motion. Mechanics: Newton's laws of motion; accelerated linear and angular motions; dimensions; systems of weights and measures; energy, work, power; transformations of energy; conservation of energy; curvilinear motion, with applications; gravitation; linear and simple angular harmonic motion; pendulum; elasticity; elements of hydrostatics; molecular properties of liquids, properties of gases; wave motion, including a general discussion of reflection, refraction, interference, resonance.

Heat and light.—Heat: Nature of heat; expansion; thermometry and pyrometry; calorimetry; specific heat; mechanical equivalent of heat; change of state; saturated vapors and hygrometry; continuity of state and liquefaction of gases; conduction; convection; radiation. Light: General discussion of the wave theory; reflection; refraction; total reflection; index of refraction and its measurement; lenses; dispersion; spherical and chromatic aberration; optical instruments; photometry; color; luminescence; spectrum analysis; problems of illumination; polarization of light.

Electricity.—Phenomena of electrostatics; capacity and condensers; electrometers; current electricity and methods of production; Ohm's law, with applications; Joule's law; measurement of e. m. f., current, resistance, power, and capacity; thermo-electricity; magnetic action of currents, with applications; electrical units; electro-magnetic induction; inductance.

Physics.—Physical laboratory. This course consists of quantitative experiments, with reports in mechanics, light, heat, electricity, and magnetism. Methods of computation, plotting, and the precision of measurements are discussed in connection with the experiments.

Statics.—Coplanar statics is treated by both algebraic and graphical methods.

SHOP WORK.

Wood turning and pattern making.—Shop work, demonstrations and shop visits. The construction of typical patterns and core boxes, solid, split, and piece, involving the use of bench tools and turning lathe.

Molding and foundry practice.—Shop work, demonstrations and shop visits. Bench molding with type patterns, swept work in green sand and loam, and molding in dry sand.

Machine work.—Shop work, demonstrations, practical work with the lathe, planer, drill, shaper, milling machine, grinder, and turret lathe. Assembling, erection, and rigger's work.

Forging.—Shop work, demonstrations. Management of fire, shaping, drawing, upsetting, swaging, welding, tempering, and die forging. Work on drop and helve hammers.

SURVEYING (ELECTIVE).

Theory of surveying.—Methods of measuring angles and distances. Cumulative and compensating errors, and corrections to be applied. Limits of precision. Use, care, and adjustment of the engineer's transit, level, and compass. Magnetic declination and variation. Local attraction. Relocation of old lines by compass bearings. Erroneous standards. Surplus and deficiency. Significance of monuments. Traverses; computations of area and error of closure. Laying out and dividing up land. System of public land surveys. Topographic surveys; transit stadia and plane table methods. Triangulation. City surveying, subdivision, and resurveys. Interpretation of deed descriptions. Textbook: Tracy's Plane Surveying.

POST-GRADUATE CHEMICAL ENGINEERING COURSE.

The post-graduate work in chemical engineering has been laid out as follows:

	Hours.	
	Class.	Laboratory.
FIRST YEAR.		
First half-year:		
Organic chemistry	3	6
Quantitative analysis	2	3
Elements of electrical engineering	2	0
Power machinery	2	0
Statics and dynamics	3	0
Physical laboratory	1½	0
	13½	15
Second half-year:		
Organic chemistry	3	6
Engineering and fuel laboratory	1	6
Quantitative analysis	1	3
Industrial chemistry	3	0
Electrical machinery	2	0
Power machinery	2	0
Statics and dynamics	3	0
	15	15
Summer work:		
Factory inspection	2 weeks.	
Shop practice in industrial shops	6 weeks.	
SECOND YEAR.		
First half-year:		
Organic chemistry	3	3
Resistance of materials	3	3
Hydraulics	2	0
Elements of A. C. engineering	2	0
D. C. machine laboratory	1	3
Machine elements	2	0
Engineering thermodynamics	2	3
	15	12
Second half-year:		
Physical chemistry	3	3
Advanced industrial chemistry	2	0
A. C. machine laboratory	1	3
Machine elements	2	0
Hydraulic laboratory	0	3
Engineering thermodynamics	2	3
Assaying	1	3
	11	15
Summer work:		
Chemical engineering laboratory	5 weeks.	
Mechanical engineering laboratory	3 weeks.	
THIRD YEAR.		
First half-year:		
Organic analysis	2	6
Chemistry of food and sanitation	2	0
Industrial chemistry	2	0
Factory inspection	0	3
Chemical factory machinery	3	0
Gas power	2	3
Introduction to metallurgy	3	0
Metallurgy of copper	1	0
Metallurgy of iron and steel	1	0
	15	12
Second half-year:		
Industrial electrochemistry	2	3
Chemical factory management	2	0
Factory inspection and design	1	3
Industrial conferences	2	0
Steam power	3	6
Metallurgy of lead, silver, gold, and zinc	3	0
Metallurgy of iron, steel, etc.	0	3
	13	15

CHEMICAL ENGINEERING LABORATORIES.

These laboratories occupy the two lower floors of the Havemeyer Building, where accommodations have been provided for the general chemical engineering laboratory, electrochemistry laboratory, furnace room, engineering and fuel chemistry laboratory, industrial research laboratories, machine and pipe shops, etc.

The chemical engineering laboratory is equipped with appliances to illustrate the fundamental chemical engineering operations, such as tanks, filter presses, pumps, siphons, vacuum dryer and condensers, multiple effect evaporators, column still, condensers, and extractors, centrifugals, clarifiers, etc.

The electrochemical laboratory contains the standard types of electric furnaces and is fully equipped for all lines of electrolytic work. Motor generator sets are provided for supplying various voltages, and an independent motor generator has been installed for electric furnace work.

The engineering and fuel chemistry laboratory is provided with all of the appliances for solid, liquid, and gaseous fuel analyses, including the determination of the calorific value, boiler water analysis and purification, oil distillation, analysis and evaluation. This equipment includes all standard varieties of bomb and gas calorimeters and the instruction is directed on the basis of the most approved standard methods developed by the technical societies and the United States Bureau of Standards.

Industrial research work is carried on in the group of private laboratories where the fundamental work is developed, after which the investigator avails himself of the commercial equipment installed in the general laboratories. The problems arising as a result of transferring operations from the laboratory to the factory, may here be met and solved by the hands of the investigator, instead of being doomed to failure by being delivered in incomplete form into the unsympathetic hands of the works foreman.

Students are given the greatest possible liberty in the methods of handling their problems, and are allowed to make mistakes and get experience. They soon become familiar with the limitations of the appliances, and learn to exercise engineering judgment in the study of problems of apparatus and process design.

It should be noted that neither the course as outlined nor the laboratory described is in any sense intended to train men as artisans or skilled operators. Familiarity with the equipment of such a laboratory will give young men that general facility of application which otherwise could be gained only by long experience under the most favorable industrial conditions.

It is confidently believed that the new principles now being introduced at Columbia into the education of chemical engineers, based primarily upon a broad and thorough fundamental education, will enable men to assume with greater success the burden of developing adequate chemical industries to conserve the natural resources and enhance the industrial and economical strength of the western continents.

METHODS OF TEACHING ELECTRICAL ENGINEERING.

By DUGALD C. JACKSON.

Professor of Electrical Engineering, Massachusetts Institute of Technology.

In the American engineering schools must be recognized professional schools of distinctly advanced grade corresponding to the schools of the more ancient professions of medicine, law, and theology. With marked sympathy for artisanship in its most useful forms, their practices and ideals are fully distinct from schools of skilled artisanship such as are in certain countries known as engineering schools;

and the preparatory studies required to make students eligible to enter their courses of instruction definitely contain much work in mathematics and the sciences, in addition to an optional range of studies in the modern languages, economics and civics, history, and the classics. That is, the American engineering schools are professional schools of university order, as the term university is known internationally. This form of the engineering schools in America is the result of experience and development, which has brought them to educational characteristics much resembling those of the *École des Ponts et Chaussées* and the *École Polytechnique* of Paris.

Originating with the third decade of the nineteenth century, the earlier American engineering schools first treated of what we now term "civil engineering," and "mechanical engineering" and "mining engineering" were later joined to the fixed curricula. It was not until 1882 that a formal course of electrical engineering was established, and curiously enough this was done independently and almost simultaneously in two of our most noted engineering schools, Massachusetts Institute of Technology and the engineering school of Cornell University. In each of these the first graduates completed their courses in June, 1885. Thereafter formal courses of instruction in electrical engineering were established in most of the educational centers supporting engineering schools, until there are now 95 such courses in the land, embracing over 8,000 students, and from which over 19,000 students have graduated. These courses can not be accepted as of equal rank, but it may be reasonably claimed for all that certain methods of instruction have proved serviceable and are given more or less full acceptance, depending upon the stability and strength of the organization and the thoroughness of preparation which may be required of entering students.

Fundamentally there are two principles lying at the root of the methods of our best engineering schools, which are:

1. It is the business of these schools to train young men into fertile and exact thinkers, guided by common sense, who have a profound knowledge of natural laws and of the means for utilizing natural forces for the advantage of man and the advancement of civilization. In other words, it is the business of engineering schools to produce, not finished engineers, but young men with a great capacity for becoming engineers, the goal being attained by the graduates only after years of development in the school of life.

2. The problem facing the engineering schools is more particularly a problem of pedagogy rather than a problem of the engineering profession. The problem is *how to properly train the students' powers to the stated purpose*. It must be grappled with all the directness and force of the engineers' best efforts, but it can not be solved as solely relating to the engineering profession.

Turning now toward electrical engineering, it is to be observed that electrical engineering demands industrial engineers—men with an industrial training of the highest type, competent to conceive, organize, and direct extended industrial enterprises of broadly varied character. These men must be keen, straightforward thinkers, who see things as they are and who are not to be misled by fancies; they must have an extended and even profound knowledge of natural laws (more particularly of those relating to energy and its transformations), and an extended knowledge of the useful applications of these laws; and they must be acquainted with business methods, the affairs of the business world, and with the ways of our fellow men.

Some of our colleagues may ask "What is electrical engineering that it demands these things of its followers?" I will answer. Electrical engineering is that branch of the profession which deals with the generation of power, primarily from fuel or water, its conversion into electrical power which may be transmitted and distributed at will for the service of the industrialist and the householder; and, for its fullest

service, electrical engineering must embrace the principles and fundamental practices underlying all the great industries and activities which it serves, and it must not shirk the controlling problems of illumination. Electrical engineering is now master of the methods of national and international rapid intercommunication, of local transportation, of ready transmission of water or steam power to a distance, of a safe and convenient method of artificial illumination, and its service in the industries is constantly enlarging but is already probably incalculable. This is a vast field of science in the industries, which brings under requisition the problems of mechanics, the characteristics and uses of materials and their correct application to the building of actual structures, the laws of kinematics and the processes of designing and using machinery, the special principles of hydraulics and thermodynamics and the manner in which they enter into the design, construction, and operation of machines, and the manner in which they affect the usefulness of machines and the efficiencies of various industries; and it brings into association with all these the specific principles of electricity and magnetism and the ways in which these principles may be used in practice.

It is only with such definitions of the field of electrical engineering and the scope of engineering education in mind that one can truly approach a discussion of "methods" of teaching electrical engineering. Lacking such definitions, the whole connotative picture is vague, indefinite, and lacking guide posts. Given such definitions, the problem obtains definiteness and reasonable precision. The word method then may be applied. These definitions or ideals are therefore fundamental to this address. With them as guides the word "method" has a meaning and leads directly to the proposition that electrical engineering instruction must be bilateral in character, dealing first with processes of direct logic applied in mathematical forms to the solution of problems, and second with processes of reasoning by balance of evidence such as are characteristic of the discussion of economic principles or historical sequences. These two processes of reasoning hold nearly equal importance in electrical engineering, in which respect this branch of engineering differs widely from, for instance, mechanical engineering, in which a great part of the mental processes of its practitioners must be by balance of evidence because the problems are commonly of a complexity which has not yet yielded to methods of rational analysis, thus leaving empirical methods the only resort. Thus, the design of a cast iron bed for a great engine lathe deals with a material of inhomogeneous character which is put under tension, compression and shear, in a physical shape for which the stresses do not yield directly to mathematical analysis on account of the complexity of the form which is imposed by the requirements of convenience in operating the complete machine.

In contrast to this, most of the engineering problems which relate purely to electricity and magnetism partake of the character of problems of hydrodynamics and yield directly to rational processes of analysis, i. e., to assault by direct logic. In electrical engineering teaching it is largely the economic aspects of the problems or the problems coming in from the collateral branches of engineering, on account of the intimacy with which the electrical engineer must deal with the numerous branches of mechanical industry, which call for empirical methods and reasoning by balance of evidence. These are important, and therefore the methods of teaching in electrical engineering must be bilateral, as already said, first to give the student power in direct reasoning and in designing by so-called "rational" processes, and, second, to give him power in reasoning by balance of evidence and in designing by so-called "empirical" processes. Along with this goes hand in hand instruction of the student in nature's laws and their relations to each other, and instruction in the applications of the methods of reasoning to minor but none the less truly engineering problems. The laboratory is a living force in such instruction, and in it the student must be substantially thrown on his own resources to execute the tests or investigations as-

signed to him, or much of the merit of the instruction is lost. It is obvious that in carrying out the methods of instruction here laid down, mathematics, chemistry, physics, and applied mechanics are central components of the curriculum; but history and economics have an important part.

Highly developed powers of observation and induction go far to develop a man's success in electrical engineering, as in most other professional branches and also in those branches of business that are of leading moment. This is a collateral reason why chemistry, physics, mathematics and applied mechanics are such important studies for electrical engineers. They teach their sane followers to observe closely and accurately and to draw correct conclusions from the observed premises. But an industrial engineer must also have broadly humanistic sentiments and sympathies, and he must be prepared to reason by balance of evidence from imperfect premises. These things being facts of every day observation, what humanistic studies can we rightfully exclude from the list useful as preparation for engineering professional life, and what methods of teaching can we exclude provided only that they are directed to the teaching of the principles of science and their applications, and do not resort mainly to descriptive processes? Our solicitude need only be exercised to see that sufficient of the mathematical and physical sciences, the historical and economic studies, and the languages make constituent parts of the curriculum; and that the spirit and order in which these are studied is right. The physical sciences, historical and economic studies, and languages are well represented in the curricula of many of our engineering schools, but there is still a failure to impress on the students' minds that the economic subjects are intimately related with the work of the profession.

Most American engineering schools have undergraduate curricula of four years duration. To these come large numbers of young men from the high schools and fitting schools, mostly from 17 to 19 years of age. They are commonly well equipped with physical vigor and latent mental strength, but they have not yet reached mental maturity. They cannot be plunged without loss into a position of complete self-reliance in their processes of study, but commonly profit from a guiding hand which shows the way to self-reliance. It is only after a couple of years of the vigorous life of the engineering schools that our American young men can profit fully by laboratory work, where they are thrown mostly upon their own resources; but, having reached this stage, their progress in self-reliance and effectiveness for solving minor engineering problems go hand in hand under the stimulus of a liberal method exercised by the teachers. The more mature graduates of colleges of arts gain an equal independence and effectiveness in less time.

Bringing into the midst of such laboratory classes the additional stimulus of professional research carried on by post-graduate students who are candidates for higher degrees (master of science and doctor of engineering), and by paid research assistants, as is done in the electrical engineering laboratories of the Massachusetts Institute of Technology, introduces a final factor of pedagogical method that bids fair to make the experiment an ideal success. This plan is there coupled with the classification of students, without reflection on any, in groups according to their powers, so that the quickest to assimilate may go forward as rapidly as their powers permit, absorbing collateral matter by the way, while the slower to assimilate may cover all necessary ground at a pace which affords them adequate thoroughness. The test of such methods by time, in the American engineering schools, is not yet complete. Indeed the last steps are quite young in our practice; but they stand high by *a priori* tests, and the few years trial thus far made indicates an ideal result from the interassociation of the undergraduate laboratory instruction by problems and the postgraduate laboratory research.

ESSENTIAL PHYSICAL EQUIPMENT FOR ENGINEERING EDUCATION.

By C. H. BENJAMIN,

Dean Engineering Schools, Purdue University, La Fayette, Ind.

A paper on this very comprehensive subject might include an exhaustive, illustrated catalogue of the equipment necessary for the proper education of engineering students. Such a list, while interesting, would not answer the question as to why all these things are necessary and what part they play in the educational program. It is better perhaps to discuss the reasonable needs for physical equipment and the principles which should govern one in its selection.

Broadly, physical equipment may be divided into two classes, illustrative and operative. Of these the latter is the more important. Illustrative apparatus such as models of machines or structures, while useful, is hardly necessary. Exhibits of raw and manufactured materials used in the arts are instructive but should not be allowed to occupy room which is needed for live machinery.

1. *Operative equipment.*—As a rule all operative apparatus should be such as can be used by the students. The use of such apparatus by instructors only, as a means of demonstration, is unsatisfactory from an educational standpoint. Perhaps the only exception is in the case of high speed wood working machinery which is dangerous to life and limb.

The logical way for a student to learn to operate a piece of apparatus is by operating it himself under suitable guidance. In general several small machines are to be preferred to one large one, as better adapted for student use. The practice of buying large and expensive testing machines, engines or machine tools is uneconomical. The best machine or engine for educational purposes is usually the one which can be credited with the most student-hours of actual use.

The test of efficiency should be applied to educational apparatus as it is to commercial machinery.

2. *Classification.*—Physical apparatus for education in engineering may be classified as to its purpose thus: (a) For testing materials. (b) For shaping materials. (c) For generating power. (d) For transmitting power. (e) For heating, ventilating, and refrigeration.

3. *Testing Materials Laboratory.*—The equipment of this laboratory is such as to facilitate the testing of all materials which are used in engineering construction, by determining their strength, elasticity, ductility, etc., under the various stresses due to extension, compression, torsion, shear, shock or continued vibration.

The majority of the machines should be of the familiar screw and lever type, adapted for testing in tension, compression or bending, and of medium capacity, perhaps 100,000 pounds. The great bulk of the laboratory work may be done on these machines with two or three students working at a time on each.

There should be a larger machine, of a similar type, with abutments for testing beams which are beyond the capacity of the ordinary machines. There should also be a larger machine of the same type capable of taking in long specimens in tension or compression and with a capacity of 200,000 pounds to 600,000 pounds, depending upon the demand for this sort of work. A torsion machine capable of twisting steel at least an inch in diameter, a drop press of medium size for impact tests, and a vibration machine for testing endurance of materials under stress, are valuable accessories, but not absolutely necessary.

For advanced work on structural materials, a large hydraulic compression machine of from 500,000 pounds to 1,000,000 pounds capacity is desirable, as it makes possible the testing of full sized samples of brick, stone and concrete.

The machines mentioned are given in the order of their importance, since the first named have the greater educational value.

The recent increase in the use of cement and concrete for building purposes makes necessary a separate laboratory for dealing with this class of material.

A mixing room is indispensable where the various materials may be assembled, sorted and mixed in the proper proportions, and the apparatus used should be as far as possible similar to that used in commercial work.

The equipment of the laboratory proper consists of benches or tables for mixing and moulding the cement, of baths and ovens for tempering and drying the samples and small dead weight testing machines for breaking them.

The larger test pieces for concrete are prepared in the mixing room and tested in the general laboratory. If a course in road making is given, there should be machinery for testing road materials by shock and abrasion in a manner conforming to commercial practice. The nature of this machinery would vary somewhat with the locality, to correspond to the specifications in common use.

4. *Work shops.*—The equipment of the shops for the shaping of material will depend somewhat upon the training which students have had before entering the university. In some localities, a certain amount of elementary training in wood and metal work forms a part of the secondary education. Prospective students may have had practice in wood turning and bench work, in forging or even in metal turning.

In general, however, it is necessary to provide equipment for the elementary instruction of at least a portion of the students. The shops should be four in number: Wood shop, forge shop, foundry and machine shop. It is important at the outset to recognize the difference between "making" and "manufacturing," that is, between doing work as a handicraft and doing it as a commercial business. In the public schools, work in wood or metals is undertaken largely as a matter of manual training.

In the university the shops should give instruction and practice in commercial methods of manufacturing. For this reason it is better at the outset to determine on the manufacture of some simple machine and to plan the equipment with that in view. This involves making things in quantity and using patterns, jigs, templates and special tools to expedite manufacture.

It would take too much space to describe in detail the equipment of college shops. Suffice it to say that it should compare favorably in variety and quality with that of commercial shops. As in the testing room, medium sized machines adapted to the use of individual students should form the bulk of the equipment. Larger and more expensive machines for manufacturing should be present in limited numbers for demonstration purposes and for the use of the more advanced students.

An important adjunct of each shop is the demonstration room or clinic, where in the presence of a group of students, the instructor demonstrates the task for the day and shows by actual performance what may be expected of the workman.

The standards of measurement in the shops should be accurate so that the students may become accustomed to the refinements of modern construction.

5. *Generation of Power.*—The equipment for generating and measuring power is naturally classified according to the source of power as: Hydraulic, steam and air, gaseous and liquid fuels, electricity.

In general the source of power may be outside the laboratories as it is usually more economical to depend upon the heating and power plant of the university for steam and electricity. Furthermore, laboratory boilers, engines and generators are apt to be too small to serve as good examples of commercial practice. As far as possible the central plant should be made available for laboratory experiments.

It is doubtful whether at the present time it is good business to provide very much permanent equipment for power laboratories. A certain amount of standard machinery in the way of engines and pumps may be desirable but there is always danger that these may become obsolete. A power laboratory should not degenerate into a museum.

As far as practicable, the better way is to provide temporary foundations in the shape of floor plates and slotted beds, to equip the building with a traveling crane, to

provide suitable inlets and outlets for the moving fluid, whatever it may be, and then to install modern machinery which has been loaned or rented from the manufacturers. We thus avoid a continually depreciating inventory and we have the latest and best examples of power machinery.

6. *Hydraulic Laboratory.*—The equipment of this laboratory will depend somewhat upon the local conditions as to water supply. Where an unlimited quantity of running water is available, as in some existing laboratories, the expense for apparatus is relatively small. If the water has to be pumped from a lower level, the expense and complication will be correspondingly increased. In this latter case, the first and most important desideratum is a suitable sump or reservoir to which all waste water may be returned and thus used over and over. The capacity should be such as to insure a practically constant level when all the machinery is in operation.

The main pumps may be driven by gas, steam or electricity.

Where electrical power is available, an electrically driven centrifugal is the most compact and most convenient. This laboratory is naturally divided into two parts:

(a) Apparatus used for determining the flow of water through orifices and in pipes and channels of various sorts and in measuring the frictional losses. This work comes more naturally in the department of civil engineering.

(b) Machinery for developing the power furnished by water, due to its velocity or its pressure and for measuring the efficiency of water power as a prime mover.

This division also includes pumps and other machinery for moving water. Mechanical and electrical engineers will be especially interested in this part of the work.

The equipment for measurement of water flow will include:

(1) A system of distributing pipes for carrying water under pressure to all parts of the laboratory and for returning used water to the sump.

(2) Tanks of metal or concrete provided with orifices and nozzles for discharging water at varying heads and other tanks for measuring or weighing the water so discharged.

(3) Pipes of various sizes and lengths provided with devices for measuring loss of head, such as Venturi meters, Pitot tubes, etc.

(4) Open conduits for measuring the flow of water, provided with weirs of various types and with some means of measuring or weighing the water discharged.

Both (3) and (4) may form a part of the distributing system as a measure of economy.

The apparatus for development of water power consists of water motors, such as turbines and allied wheels, and of pumps of various types, including direct-acting single and duplex pumps and centrifugals. The water wheels are to be equipped with brakes, preferably of the Prony type, and with devices for measuring the speed of the wheel and the weight of water used.

In a similar manner, each pump must be equipped with devices for measuring the input of power and the output of water.

As already intimated, some of the apparatus should be borrowed rather than purchased and there should be facilities for handling and installing temporarily such loaned machinery.

7. *Steam and air laboratory.*—The purpose of this room is to afford opportunity for receiving and testing various types of steam and air engines.

The equipment should comprise modern examples of simple and compound engines, turbines and compressors, with accessories for condensing and weighing steam.

As before mentioned some of this apparatus may be borrowed and put on temporary foundations. It should include at least the following: A small slide-valve engine, a high-speed automatic engine, a compound Corless engine, a small steam turbogenerator, a compound, two-stage air compressor.

Probably the most useful machine in the list is the air compressor as it is self-contained and well adapted for working out thermodynamic problems.

For measurement of heat and power, there should be a full equipment of brakes, indicators, thermometers, calorimeters, etc.

Attention should be paid to apparatus for calibrating all the measuring instruments, especially the gages and thermometers.

8. *Gas engine laboratory.*—The same principles apply in equipping this laboratory, as in the one just described.

There should be represented one or more types of gas producer, a horizontal engine of the Otto type, one or more vertical two cylinder engines, an oil engine and several small four cycle and two cycle gasoline engines. It is especially necessary that in this room there be a testing floor where small machines may be clamped in place for testing. On account of the high speed of small gasoline engines, the ordinary indicators and brakes are unsuitable. Indicators of the optical type and electric or air brakes should be provided.

It is desirable but not absolutely necessary that there be a room for gas analyses and heat determination adjoining this laboratory.

9. *Electrical laboratory.*—This is best treated as a transformer or substation of the main power plant of the university. Current is received from the power house and by transformers and motor-generator sets is converted into whatever form may be desired. The laboratory should be provided with one large switch board controlling every wire and every outlet in the room. This should be plainly marked and properly safe-guarded.

All the various motors and generators used for testing purposes should be mounted on platforms in such a way that they may be moved and rearranged quickly and easily. Convenient inlet and outlet wires must be available at such location.

It is desirable to have a traveling crane to handle the heavier pieces. A laboratory thus arranged possesses a flexibility and availability which tends to good efficiency. Space will not serve for a detailed description of the apparatus. Such might well be the subject of a separate paper.

10. *Transmission of power.*—Under this head comes the apparatus for measuring the efficiency of transmission by journals, gears, belts, chains, etc. This laboratory should contain a machine for testing belts and ropes and determining the power transmitted, the slip, and the efficiency. Both the driving unit and the absorbing unit should be electrical and it is better that they be interchangeable so that the machine may be reversible.

A machine for testing oils and other lubricants to determine their friction and lasting qualities, should also be provided.

Special machines for measuring the efficiency of gear and chain drives will probably have to be made to order.

11. *Heating, ventilating, and refrigeration.*—This laboratory should be if possible a separate building, specially constructed with a view to making radiation and conduction tests on a commercial scale.

The ground floor may be devoted to refrigeration, containing small machines of both compression and absorption types, ammonia and brine coils, ice tanks, etc.

The second floor may contain several rooms with different exposures and radiating surfaces, and with various types of heating and ventilating apparatus so erected that it may be put up with unions so that it can be easily changed for experimental work. A combined pressure and suction air system should be installed in one room and connected with each room in the building. Provision should be made so that either heated air or cooled air, either hot steam or cold brine may be circulated in any room at will and the circulating pipes should be equipped with devices for measuring temperatures and velocities.

No detailed description of this laboratory is possible here, but it suffices to say that it should serve to make any test with hot or cold mediums on such a scale as to be reliable.

12. In general it may be said that the physical equipment for engineering education should be modern, should be adapted for experimentation and should be used by students and for students. No piece of apparatus should be tolerated which is not valuable for putting in practice the theories of the classroom and which can not be used directly by students.

COORDINATION AND COOPERATION WITHIN AND BETWEEN TECHNICAL SCHOOLS.

By GARDNER C. ANTHONY,

Dean Engineering School, Tufts College.

I present this topic with little knowledge of the conditions which may prevail in our sister republics but believe that a recital of our own experiences and partially solved problems can not fail to be helpful in some degree. It may at least suggest some of the things to avoid as well as those deserving trial. The results of my personal experience and observation extending over many years lead me to believe that the highest efficiency in engineering education will not be attained until technical schools have entered into the fullest cooperation with each other, and have learned to maintain a high degree of coordination between departments. Indeed, it seems to me that the value of an engineering education is to a much greater degree dependent on effective coordination of departments than on superior excellence in individual courses or laboratory equipment.

Cooperation between schools may manifest itself in various forms of service—such as the avoidance of unnecessary duplication of courses; a common use of laboratories and laboratory equipment; frequent visits by teachers to institutions of like character for the interchange of ideas; the exchange of teachers; engineering society activities; and a more intimate acquaintance with the objects and methods of instruction between schools of different grades.

DUPLICATION OF COURSES.

There are comparatively few institutions in this country with sufficient funds and material equipment to meet the increasing demands for instruction in new courses. These demands arise largely from the subdivisions in the engineering profession, and the development of fields of professional activity which were unknown but a few years ago. The departments of highway and municipal engineering, ceramic and cement technology, and even chemical engineering are of sufficiently recent date to demand consideration at this session of the congress, and there are many other phases of the engineering profession, such as telephony, wireless telegraphy, aviation, industrial management, in which more or less specialization is being made in some of our engineering schools. What then shall be the attitude of schools and educators toward these new fields? Although I believe the trend of undergraduate technical education to be toward generalization rather than specialization, I realize that the problem of dealing with the special fields must be solved in some degree by the technical schools. May it not be that one promising solution will come from the affiliation of the several interests of institutions whose geographical situation will permit of freedom in the exchange of teachers, students, and even classes, for the more advanced and specialized courses? Not infrequently in this country schools which should have the closest cooperation are conducting parallel courses in special departments at an unwarranted cost to each, when the demands of the profession could easily be met by the equipment, or courses, of one institution.

The sudden growth of forestry gave this new profession unwarranted prominence and created a considerable demand for the education of specialists. This stimulated competition between institutions and added a new department to the curriculum. One such school, connected with a large university, has lately been diverted into other channels to give freer scope for a similar school in a near-by university, because of the insufficient demand for experts in this field, thus exhibiting the best type of affiliation in a common interest. The idea of competition between institutions in the struggle to introduce new courses is unworthy of the ideals of technical schools, but institutions should unite in the common cause of developing new courses by mutual assistance in locating and promoting their growth at suitable universities and in such number as the demands of the profession may warrant. The cause of technical education is not largely dependent on the introduction of new courses, but they stimulate the professional interest in the school and serve to produce a more cordial and helpful relation between the teaching and practicing engineer.

The exchange of teachers is another form of cooperation productive of the highest good and closely related to the foregoing. Although the interchange of teachers between schools of different nations has proved to be most helpful, the practice of exchanging teachers between the technical schools of this country has received little attention. Such an exchange may produce some slight interruption in the ordinary routine work of a course, but the advantages to be derived are such as to outweigh any slight and temporary inconvenience. Indeed, I know of but one other form of cooperation that is likely to produce better results in maintaining progressive ideals, and that is an exchange between the teachers of technical schools and the engineers of the applied professions. This method has already been proposed by a large manufacturing concern which has received many of its employees from the graduates, and occasionally from the faculties of our technical schools.

The practice of making systematic visits to other institutions has proved to be of inestimable value to the institution with which I am connected. A so-called visiting delegate is appointed annually to spend two weeks in visiting a selected number of important schools with the object of informing himself and his college concerning the ideals and practices of these schools. A formal report is required to be made to his faculty, which thus benefits by the experience of its delegate. The expenses have been borne by the institution. In this connection I can not lay too great stress on the practice of attending the annual convention of at least one engineering society for the purpose of promoting a more cordial relation between members of the profession, and receiving the stimulus which comes from such relations.

THE USE OF LABORATORIES IN COMMON.

The investment of the funds of an institution in expensive steam, hydraulic, and electrical laboratories which may have but a limited use is a serious drain on the finances of a college and is suggestive of much needed cooperation. A properly equipped hydraulic laboratory is not only an expensive part of a technical school equipment but its use is frequently limited to a small part of the year. Yet such equipment frequently could be utilized by classes from other institutions, or the course repeated for the students of other schools. Such an arrangement has been found to be entirely feasible between two of the smaller technical schools of New England, although the distance between one of the schools and the hydraulic laboratory is nearly 60 miles. The experiment has proved a great success and it would be possible for that same laboratory to be utilized to a much greater degree by opening it to other institutions. What is true of hydraulics is true of other departments of electrical and mechanical engineering.

I see no insuperable difficulties in an exchange of students for certain courses so as to permit of special instruction, and the use of special equipment at another institution which may be better prepared to conduct this work. This kind of cooperation

would lead to very stimulating influences since it would be possible to establish a more intimate understanding between the allied departments of the associating institutions. It should be much less difficult to do this than to maintain the proper cooperation between the industries and the technical school, as has been so successfully developed in the cooperative school at the University of Cincinnati. It must be apparent that to make such cooperation effective the affiliating institutions should not be so widely separated as to prevent a rather intimate acquaintance with each other's work.

COOPERATION BETWEEN SCHOOLS OF DIFFERENT GRADES.

As yet little attention has been given to the affiliation of interests which are common to closely related schools of varying grade. Of first importance is the cooperation with our college preparatory schools. It is not sufficient that the preparatory schools should have trained its students to pass certain examinations, and to have performed certain intellectual exercises, commonly believed to be necessary for entrance to college, but the latter should seek to utilize the work of the former if only for the purpose of stimulating the interest of the preparatory school in the curricula of the engineering school. There should be such cooperation and coordination between these two classes of institution that the work of the preparatory school in such courses as chemistry, physics, drawing, and mechanic arts should be basic, so that students having this training could be credited with advanced standing in these subjects, and, however much reviewing of these topics may be necessary, the student should be made to feel that the course is progressive.

I do not know of any attempt at cooperation between the trade school and the technical school of college grade, but it is both feasible and desirable that this be done, not only because each has much to learn from the other, but the trade schools of a republic should present greater opportunities than that of training for a specific vocation and should in no way prove a barrier to the higher education. Specialized training at an immature age has a strong tendency to produce class distinction by emphasizing the horizontal stratification of society. This may be partly overcome by coordinating its work with the higher technical schools so that the more able students may rise through this department of education to that of professional grade. The educational systems of the Americas should lead to the elevation of mankind as well as to the material prosperity which comes through skilled workmen.

The coordination of departments within the school is of even greater importance. It is probable that our Pan American brethren have not avoided the evil of pedagogical independence, or failure to coordinate, which has so retarded the progress of technical schools and colleges of this country. I believe that the decline of classical education in our colleges has been largely due to this cause rather than to the attractions which the applied courses offered. Because the technical and applied courses have from necessity been forced to some degree of cooperation and coordination they have been somewhat protected from that narrowness and extreme conservatism which falls to the lot of those who delve deeply in a limited field of study or research. The student and the scholar of to-day can not be a recluse, nor can he broaden himself while intrenching himself within the boundaries of his own subject.

The period has passed when any teacher, however great, may teach apart from his colleagues with success to his own work, his college, and his students. We need a closer correlation of the several departments of a school for the good of both the teacher and student, and this may be attained without in any way impairing the efficiency of the teacher by limiting his independence and restraining the development of the individual. The practice is too common of placing an inexperienced teacher in charge of a class and through failure to supervise his methods of instructing permit him to drift, until, by chance, perhaps in the course of years, he discovers his inefficiency. This is an evil to the teacher and a still greater wrong to the army of students who may

have received instruction from him. Yet there has been considerable prejudice in technical schools and colleges against any supervision which might lead to a coordination of the work of unrelated as well as related departments, and which would bring to light a lack of efficiency on the part of a department or a teacher.

It may serve to emphasize the point under consideration to cite a personal experience. Several years ago the technical school with which I am connected introduced a new course in mathematics, the success of which was largely dependent on its coordination with other departments, such as physics, drawing, and English. In order to meet any adverse criticism that might have arisen from those who were not informed of the character of this movement, but who might have been more or less prejudiced against it, I adopted the plan of regular attendance on the new course, doing such part of the work as time permitted. This was continued for a period of six or seven weeks with rather unexpected results, for not only did I fortify myself against any unjust criticism that might be made, but the teachers in this course became interested in the effect produced on their constant visitor, and one of them suggested that it might be of mutual value if he were to visit a course which I was then giving—a proposition which was as pleasing to me as it was unexpected. It resulted in an understanding of each other's methods and the relation of our work which proved to be of the greatest good to the institution. The influence on the student body was also good, in bringing about a more intimate and friendly relation between them and the dean, who for the time being was a fellow student of theirs. But although I never heard of any unfavorable comment being made by members of the faculty of our own school, the adoption of such a plan was regarded by other institutions with surprise and by some was judged to be an invasion of the sacred rights of a professor, who should be monarch of all he surveyed within the domain of his own department. So far from producing any such feeling in my own school, it has led to the most cordial relation between departments and a closer coordination of courses.

College teachers do not sufficiently comprehend the extent to which this coordination is possible for while it is easy to understand an affiliation between such departments as physics and mathematics, it is not so simple to appreciate the possibilities of a coordination of mechanic arts and the study of English, or of graphics and English. Yet these relations are not only possible but have been proved highly efficacious in promoting the standards of the affiliated courses. The interest manifested in the writing of English and in the study of literature has developed to a remarkable degree in my own school since these subjects have been divorced from the methods employed in our classical colleges, and closely correlated with engineering courses. The same plan is now being used to develop a greater interest in modern languages.

It is because of the successes that have been achieved in this and other phases of coordination that I commend this seeming heresy to educators in the firm belief that it will lead to greater unity of purpose and consequently to a higher standard of technical education.

COOPERATION BETWEEN ENGINEERING SOCIETIES AND ENGINEERING SCHOOLS.

By FREDERICK REMSEN HUTTON,

Emeritus Professor of Mechanical Engineering, Columbia University.

An eminent scientific man has recently observed that if the engineer will formulate his problem in applied science clearly and exhaustively, the scientific solution of it will be sure to follow. So in the discussion of the problem of the title, a long part of the road will have been traversed if at the outset the engineering society shall be

defined and its functions clearly stated. The engineering school should be similarly definitely treated. This paper is to treat only the cooperations possible from the standpoint of the engineering society, leaving the converse of this topic to be discussed by other competent authority.

The writer brings to his discussion the experience of 23 busy and happy years as secretary of an engineering society, during which time he was also a professor of engineering, in full tide of a departmental development. What is then an engineering society, and what are its important functions?

An engineering society is an association of persons engaged in the practice of the profession of engineering in any specialty or in all of them. Such association may be more or less compactly or highly organized, as a purely voluntary body, or as an incorporated membership. In the latter case, it has the necessary officers and committees for the effective conduct of its functions. Such functions may be primary and secondary. The usual primary functions are four:

First, to advance the profession of engineering by the securing, recording, publishing, and distributing of scientific fact, truth, and law, and professional achievement under these in the fields of public service or of private productive industry. The most valuable of all its functions is this recording of individual research and experience for which the society furnishes a channel that might not otherwise exist. The society can undertake this work as no isolated individuals—or very few—can afford to do. The published records advance knowledge and civilization, and are furthermore of signal benefit to the profession as a whole, as respects public appreciation, dignity, and influence.

Secondly, and in the performance of its first function, the society will originate and establish engineering standards as respects methods, materials, proportions, practice, and ethics, on the basis of gathered knowledge, experience, and achievement.

Thirdly, the organized body through its open forum and otherwise can speak for the profession and on behalf of its interests with an authority and a weight in public and scientific matters which the individual can command only in very rare cases. This is again of public significance in making for progress in material civilization and in intellectual horizons.

In the fourth place, and by all of the above means, the society is the builder of sound professional reputations, both on the basis of recorded achievement on the one hand and of sound expert criticism thereon upon the other. The member who reads or speaks before such bodies becomes known widely and a judgment is passed upon him by a jury of his peers, who are themselves liable to competent review if their judgment errs.

Secondary functions derived from these primary activities may be:

Fifth, the personal and individual advantage to members in the way of professional opportunity and advancement, which will be the results of their membership and of the activities of the society's office, and of outside requests upon it for recommendations of competent talent.

Sixth, the society may render public service in the activities of city, or State, or nation, by commissions or delegated experts. The civilization of the twentieth century is a technical or engineering civilization, and the common citizen touches these matters at many points of contact day by day. Organization is essential to the rendering of service under this head, and governmental departments must necessarily apply to the society for comprehensive service.

Seventh, the society and its members are the primary source and origin of knowledge concerning what subjects may be properly, or are now insistently the subjects for scientific research. Its members touch the problems in applied science at first hand. The papers of the society should be the starting point for laboratory investigations of the most useful sort.

Eighth, the engineering society will for the above reasons set the ideals for the profession, and in so doing will, or ought, to set them for the students of engineering in the schools.

What now is the engineering school, and what are its functions? It may be defined as an apparatus or device for the preparation of those who are to practice the profession of engineering as their life work in its several specializations. To this end, like the engineering society, it has both primary and secondary functions.

Its first and primary function is to train and discipline the minds of its students, and to draw out and develop their otherwise latent possibilities. It must secure in them a capacity for concentration, the power of attention and for clear, accurate, and definite thinking, with the power of acute observation and the drawing of sound conclusions therefrom. As means, and as a factor to these ends, the school must, in the second place, give a familiarity with the laws and facts of pure and applied science as these are formulated in the domain of physics, mechanics, mathematics, and chemistry. The engineer must not blunder nor wreck his career by attempting to do what nature forbids. Applied science is a splendid teacher of the supreme need for truth in the inward parts. Natural law will not be bluffed nor deceived by a pretender.

As secondary functions, the engineering school must train eye and hand and body in the laboratory, shop, and drawing room or field, both for the attainment of discipline in itself, and also to help the professional beginner in his attack upon the lower rungs of his ladder of achievement. The engineering school should make him as little of a bungler in the craftsmanship which is elemental in so much of engineering work as is consistent with the demands upon the student's time. The existence and notable development of the great laboratories of instruction in the modern highly organized engineering school compel a further secondary function, in that the advanced student shall be equipped in some degree for research in the fields of knowledge as yet untrodden and uncharted.

Again, the engineering school should exercise itself to bring out and strengthen the qualities of good morals and good manners which are by right the hall marks of the practitioners of a noble profession.

Furthermore, it must not be lost sight of that the profession of engineering is bearing more and more of responsibility in a modern civilization and that by a sort of compulsion the modern engineer will be a college-trained man. If so, what is wanted is all possible help in every way to ease the transition from the atmosphere of the engineering school (and even more so of the college of so-called liberal arts) to that of the world of workaday affairs. The young graduate is rarely fitted to take up his new work at once or without jar. His theoretical training does not synchronize (to borrow a term from the practice with alternating electric currents) with practical requirements in many cases.

Hence, if these contentions are sound, what cooperation can the engineering society extend to the engineering school? The foregoing discussion has laid the foundations for several of these.

First, by creating and fostering in the society itself a sense of obligation toward the engineering school. This is a sort of "noblesse oblige" that the society has an opportunity to serve the school, and shall rise to it.

Second, by supplying to the students and to the professors in the engineering schools prompt and first-hand knowledge of the problems in applied science which confront the practitioners of engineering, and of the solutions and methods of attack which have proved successful in experience with such problems.

An engineering achievement is first chronicled as a news item, and perhaps with some fullness of scientific outline, in one of the technical journals. It is then fully discussed in its professional aspects in the transactions or proceedings of the society

at a meeting. Lastly, sometime later, it becomes imbedded in the published volumes of the formal text books. The latter are necessarily some years behind the current practice. The society papers may be only a few months in arrears, and their topics have the appeal of live issues to the active student mind. How shall this result be attained in practice? There seem to be two ways.

The first is by the practice of placing the annual volumes of the transactions of the societies on the shelves of the library of the engineering school, and if the society publishes a monthly or frequent journal, or bulletin, to place the latter on the table of current periodicals in such library, either as a gift from the society or on a basis of easy and cheap purchase therefrom.

The other and more significant, and to the writer the more important and effective way is by the creation and fostering of student sections or branches of the society in the engineering schools. These branches should be under the guidance and oversight of the professors and instructors in engineering in the institution. They should enroll the students either directly or as members of their own engineering society as affiliated with the society of engineers. There should be conferred on them the right to wear proper insignia of such membership, and to hold meetings under their own organization. The engineering society should supply to the meetings of the branches or student sections its published papers as material for reading and discussion at such meetings. These papers may also be the topics of seminar teaching for graduate or advanced students whether the section or the institution library be the channel availed of to get such papers into class.

The student section has also other and secondary advantages to the engineering society in return. It will be from such bodies that the younger generation will rise up to take part in the work of the society as the years and the activity of death remove the older men from service.

The third method of cooperation is for the society, either through the student branch, or without its aid, to furnish direct pedagogic service to the engineering school by occasional single lecture covering the facts of professional standards, or by courses of differing lengths conducted by members of the society and upon the topics of their specialization. These addresses should seek to imbue the student with the best engineering spirit of his fellows. Or the society may be the channel to organize the presentation of addresses or papers before the student body assembled to this end, so that the stimulating effect of the presence or cooperation of the active practitioner may come to, and permeate the body of men who are preparing for service. It is of greatest service to have the student discover that certain subjects of his study which he thought of secondary or minor importance are regarded by the practitioner to be of fundamental significance. He gains a new attitude toward his work and a new interest in it.

The society, in the fourth place, may cooperate by organizing and conducting the interchange of needs between the laboratory of the school and the practitioners of the profession. The laboratory needs to know what are the problems deserving of research, and the engineers in practice are the proper persons to formulate the statement of such problems. The laboratories have apparatus of one sort, but have not the machines of full size. The members of the societies have the machines of full size on which alone many researches can be tried out, but are not equipped with the laboratory apparatus of measurement. The shop and productive establishment must alone be the laboratory for many experiments. The societies may bring these two elements together as its contribution to effective cooperation.

Fifth, the engineering society may offer prizes for papers presented or prepared in the student branches, and adjudged by competent committees to be worthy of this recognition. Such papers published in the bulletin or journal of the society benefit all parties in obvious ways.

Sixth, and finally, the societies may cooperate by the occasional presentation and discussion of papers by its members in practice, which shall present the needs of the profession in the education of those who are to enter it. By this means the schools may see where they may be wisely strengthened and developed from the point of view of those whom they serve. A committee of visitation from the society may from time to time render great aid in stimulating the work of producing engineers.

By this discussion, necessarily made brief by the limits of time, the way is now open to present the other side of the mutual obligation as respects cooperation. The writer will be glad if by his discussion he can have served to bring about the result so desirable on both sides. He takes pleasure in closing to speak gratefully of effective cooperation in preparing this paper from Mr. Calvin W. Rice, secretary of the American Society of Mechanical Engineers, and from Prof. Chas. F. Scott, of Yale University, New Haven, Conn.

COOPERATION BETWEEN ENGINEERING SOCIETIES AND ENGINEERING SCHOOLS.

By JOHN HOPKIN LEETE,

Director of Pittsburgh Carnegie Free Library.

Toward the close of the nineteenth century the conception of the function of education in this country underwent a somewhat sudden and revolutionary change. The days when education had been limited for the masses to the three R's of reading, writing and 'rithmetic, the days when, as Dr. Davenport has so aptly said, "Meditation was the only occupation of the thoughtful man, religion was his only consolation and the only use for learning was in the reading of the scriptures" these days had ended with the passing of the eighteenth century. They had been succeeded in the first half of the nineteenth century by the period of the development of our large cities, of our factories and of our labor organizations, a period in which the people's education had gone beyond the three R's to history, grammar and geography but which still disregarded the economic possibilities of educational training save as they followed as a natural by-product of the increased intellectual capacity of the individual. Then, in the latter half of the nineteenth century, had come the wonderful discoveries in science and the applications of these discoveries in industrial fields, the tremendous growth in the number of persons engaged in industrial occupations as a result of these inventions, the extension of our trade to the markets of the world, the growing appreciation that our prosperity had its foundation in the wealth of our natural resources rather than in the skill of our workmen or the superiority of our manufacturing processes. With these changed conditions came the realization of the direct economic values possible through education. It was seen that education is concerned not only with the intellectual welfare of the individual, but should also include training to enable him to become a self-supporting and so a self-respecting unit of the State.

But so far as engineering education was concerned, this extensive program was undertaken in rather a haphazard fashion. It was not possible to make a careful and systematic study of the work of the engineer as a basis for the educational program, for in the technical sense in which we use the term to-day the engineer himself was an unknown quantity. The most that could be done was to remodel the existing courses in science with the purpose of making them more practically useful. The first courses in electrical engineering, for example, were nothing more than practical adaptations of the earlier courses in physics. From the nature of conditions, therefore, the first adaptation of science to practical purposes had to be made by teachers of science who had had no experience in engineering practice. Later, the graduates of these courses,

with somewhat limited engineering experience, made further modifications in the curricula, changes which too often consisted of the addition of subjects of little value from the educational standpoint, but were supposedly of great practical importance. It has been through such tinkering, often ill-considered and freakish, that we have come to our present courses of study. From this brief survey of the history of its evolution it is evident at least that it is not at all certain that the existing types of engineering education represent the best that might be done, a fact which has led to the many experiments with which we are all familiar.

That the need of further reorganization of our technical courses is felt by both faculty and practicing engineers is evidenced in other ways. To the teacher has come the realization that the indiscriminate addition of multitudinous subjects in the efforts to meet the expansion of knowledge in many fields has congested the course to the extent that either more time or a careful pruning of courses of study is necessary for sound scholarship. From the engineers, on the other hand, has come constant criticism of the product of the technical schools, sometimes narrow criticism induced by the failure of the schools to prepare the student to fill immediately a specific position and sometimes really disinterested and broad-minded suggestion resulting from the desire to assist the school in inculcating the qualities and training necessary for the engineer. With this criticism of the product has been coupled more or less good-natured raiillery at the teacher on the score of his supposed devotion to impractical theories. Without making any assumption either as to the efficiency or the failure of present engineering education, it would seem obvious that cooperation between the practicing engineers and the engineering faculty in the solution of the problems of technical education would be helpful to both the school and the engineering profession.

It is my province to discuss this question from the standpoint of the engineering school—but it is to be noted that cooperation would bring certain advantages, also, to the engineering profession. One obvious advantage is, of course, the fact that better trained students means more efficient employees; but there are other considerations involved. The engineer is the latest arrival in the professional ranks. The preacher, the lawyer, and the doctor have the prestige that comes from centuries of recognized authority in their respective fields. The engineer's claim to the right to professional standing has obtained recognition in the minds of the majority through the magnitude of his trained service to mankind, but if the profession is to be established beyond question the maintenance of a high level of professional ability and training is imperative. The engineer's mistakes are difficult to disclaim. The lawyer can always explain his failure to win a case by the claim of a prejudiced judge or jury. An intervening Providence takes care of a doctor's mistake. The minister deals in futures which afford no tangible evidence of success or failure. It is difficult, however, to explain a collapsed bridge or a machine that won't run. Every such failure not only ruins the individual engineer, but in a way brings discredit to the profession as a whole. The engineer is equally concerned with the engineering school, therefore, in the production of the best possible engineering material—from a selfish as well as an altruistic motive.

From the standpoint of the engineering school it seems to me that cooperation with the engineering society might be utilized effectively in two ways: First, in the revision, and to some extent, the standardization of the engineering courses, and second, in the provision for closer contact between the school and the profession. We teachers would like to have the practicing engineer tell us from his experience "What should the graduate know?" "What should he be trained to do?" "What particular qualities should be cultivated?" Given definite answers to these questions the professional teacher may reasonably be expected to determine upon the course of study and educational methods calculated to accomplish the desired results. The second factor, personal contact with the engineer, is also badly needed. The faculties of our engineering schools are as a class notably conscientious in their service—but

they are not entirely removed from the peculiar besetting danger of all teachers. The constant contact with minds less mature than his own, in conjunction with the fact that from the nature of his relationship with the student his is the last word in every question of discussion, sometimes results in an attitude of over self-sufficiency on the part of the teacher. Moreover, the repetition of a course year after year to students who have reached just the same stage of development sometimes leads to the wearing of a rut which may become so deep that a derrick is required to raise the course to level ground upon which it may adjust itself to changing conditions. Still further, it seems unwise not to make use of the stimulus to work which comes with the appreciation on the part of the student that what he is getting is what he must know in his future work and that men in practice are drawing directly upon their knowledge of subjects he is now pursuing. Direct and intimate contact with the practicing engineer and his work would do much to accomplish these results. It is proposed in this paper to discuss these two phases of cooperation, revision of the curriculum and direct contact with practicing engineers.

Toward the solution of the first problem a beginning has been made. Upon the request of the Society for the Promotion of Engineering Education a joint committee was appointed in 1907, comprising representative men from that society, the American Society of Civil Engineers, the American Society of Mechanical Engineers, the the American Society of Mining Engineers, the American Institute of Electrical Engineers, and the American Chemical Society. The committee lost much time in organizing and in arranging for meetings because of the wide distribution geographically of its membership and later found itself hampered by lack of funds and machinery to undertake so big a project. As a result practically nothing has been accomplished in the nine years of its existence. At present the committee is awaiting the report of a representative of the Carnegie Foundation for the Advancement of Teaching, which is making a study of engineering education. With the presentation of this statistical report the way will be open for constructive work by the committee.

Personally, I believe that more could have been accomplished had the revision of courses been referred to separate committees of each national society. The problem of the standardization of engineering education as a whole is so big an undertaking that I question whether specific suggestions of great value can come from a single committee. Certainly the task would have been simplified if each national society had been requested to express, through a representative committee, their opinion of the mental training, the technical knowledge, and the qualities which their experience has proved necessary in their particular field; in short, to specify the entrance requirements to their particular professional work. Given these data, experimental research and investigation as to the subjects of instruction and the methods of teaching best calculated to attain the desired results could be pursued by the man best qualified to solve such questions, the professional teacher. We have no mistaken idea that we can produce the full-fledged engineer by any course of technical study, however effective, but we ought to be able to give that training and cultivate those qualities in our graduates which will fill the bill of specifications drawn by engineer employers and which will enable the fledgling to become an engineer through the knocks of experience. It is under such conditions, I believe, that cooperation between engineering societies and engineering schools can be most effective in the discussion of engineering courses of study. It is hoped that either through the joint committee mentioned above, or through other agencies, some results may soon be achieved.

Analysis of the criticisms of engineers upon the shortcomings of our engineering schools shows that many of the faults complained of result from lack of experience and lack of common sense, in personal qualities of mind inherent in the individual, or from personal habits and characteristics due to poor environment and which are difficult to eradicate by any definite process in the limited time available for an engineering

course. There are certain failings, however, which can with justice be laid at the door of the school, and for some of them a most effective means of correction is furnished by providing opportunity for contact with engineers and engineering practice, the second method of cooperation to be discussed in this paper.

With this in mind the faculty of the institution with which I have the honor to be associated sought the assistance of a strong and progressive local association, the Engineers' Society of Western Pennsylvania. As a result of this cooperation several practices of great benefit to the school have already been adopted and others are under favorable consideration. The society has extended to engineering students of the district the privilege of junior student membership, which enables them to take advantage of the lectures and engineering papers and discussions delivered before the society and, indeed, gives them the full privilege of the society except that of the franchise. Assistance has also been given in providing experts for the discussion of particular topics in our own class rooms and before our student societies. Again, the society is now planning to hold a smoker for engineering students for the purpose of enabling them to meet socially the engineers of the district. I have also hopes of persuading them to appoint a visiting committee for each department to act as expert advisers on matters on which the opinions of practicing engineers would be particularly valuable. In all these projects the society has been most cordially helpful and has given plenty of evidence of its willingness to cooperate in all reasonable ways.

The most important contribution to engineering education made by the Engineers' Society of Western Pennsylvania, however, has been the engineering problem competition established by them two years. For several years the New York Society of Beaux-Arts Architects has maintained a competition in architectural design which has been part of the program of work of about a dozen schools of architecture. The possibility of establishing a similar competition in engineering problems was presented to the Engineers' Society of Western Pennsylvania in the spring of 1912 and as a result a committee consisting of five members was appointed to study the question in detail. This committee spent over a year in the investigation and discussion of different plans, in the course of which the opinions of both faculty and students of schools who were regularly taking part in the architectural competition were consulted. It was finally decided to recommend to the Society the adoption of an engineering competition, which should contain some of the features of the Beaux-Arts competition but should differ in other respects because of the different conditions prevailing in engineering schools. The society adopted by unanimous vote the recommendation of the committee and appointed a standing educational committee of five members to work out further details and carry the plans into operation.

Briefly, the scheme provides for the setting each year of a problem in each of the principal fields of engineering practice, the problems for a given year being placed in the hands of the student at the close of the preceding school year. The problems are set in terms of actual practice, the statement of governing conditions and of requirements to be fulfilled being made as nearly as possible in the general terms in which the engineer would be engaged to design a machine or structure in his professional practice. The solutions of the problems are due in May of the following year, at which time they are viewed and judged by a standing committee of prominent engineers. No money prize is offered, but certificates of first, second and third award and of honorable mention are given in each of the fields in which problems are set.

The purpose of the competition being primarily to promote engineering education, the competitive feature has been regarded as of secondary importance. Every effort has been made so to arrange the competition as to make possible the closest coordination of the problem with the regular courses of instruction. A number of institutions, among them the institution with which I am connected, make the problem a part of the regular courses of instruction, which all students of the senior class in a department are required to compete. To make this possible practically a full

year is allowed for the problems, thus permitting their introduction into the work of either the first or second semester, or as a thesis subject as may be desired. In order further to emphasize the instructional value of the competition the greatest freedom is allowed in the method of conducting the work, each school being responsible for its own students, the only requirements being that "the solutions shall represent strictly the work of the individual contestants without other assistance than directions concerning printed data and such general discussion as shall be consistent with honorable competition." The student is encouraged to collect as many data as possible bearing upon the problem, the only requirement being that he shall append to his solution a complete record of the sources of such information. Only such solutions are considered as bear the personal approval of the head of the department in which they originate.

Competitions were conducted under these plans in 1913-14 and in 1914-15 and that for the present year is now under way. It had originally been intended by the engineers' society to limit the competition to engineering schools in the neighborhood of Pittsburgh, but upon request there were admitted to the first two competitions certain institutions at considerable distance, as for example, the Georgia School of Technology, the University of Maine, Tufts College, and Cooper Union. As the result of the very favorable opinion of departments taking part in the previous competitions the society decided to throw open the competition to all engineering schools, an invitation to which fifteen of the representative engineering institutions of the country have already responded.

From my personal observations of the results obtained by this competitive plan, as well as from the testimony of other institutions which have adopted it, I am convinced that the scheme provides a most valuable adjunct to the usual methods of instruction in an engineering school. It has proved most effective when the problem is made part of the regular course of instruction required of all students. Under such conditions it has been our experience that the plan accomplishes the following results:

1. The setting of a problem apart from a text book by engineers engaged in actual practice gives to the student what he regards as a more intimate touch with his future work. The attitude of mind thus induced brings new interest to his work.

2. The incorporation in the scheme of instruction of a problem complete in its way and stated as it occurs in actual practice affords an opportunity for the application of many principles of theory which are of necessity more or less disconnected in the ordinary schedule of studies. It thus serves to develop the synthetical quality of mind necessary for the constructive engineer. Moreover, this assembling of the instruction of many teachers is helpful in coordinating the various courses in the mind of the student.

3. The problems stimulate originality and teach the student to investigate thoroughly and carefully, discriminating between the important and unimportant details.

4. The judgment of the problem by outside practicing engineers appeals to the student and transforms the instructor from the position of task-master to coach or consulting engineer. An instructor of another institution has told me that the problem has led to his being fairly hounded for information, the first time in his teaching career that such a condition has existed.

5. The determination of the character of the design and of the materials to be used from the consideration of safety, of the life demanded and the cost of construction introduces important factors in engineering instruction difficult to accomplish by the usual methods.

6. Acting as consulting engineer to a group of students engaged in the solution of a complete problem from actual practice, with the knowledge that later the problem is to be judged by an outside committee of practicing engineers, serves as a stimulus to the instructor, and helps to prevent instruction from getting into ruts. The fact that his students are also in competition with students of other institutions, furnishes an additional stimulus.

These factors in engineering instruction are certainly worthy of consideration.

It is true, of course, that any plan which involves intercollegiate competition is exposed to certain dangers, but it would seem possible that a plan, so directly under the control of the faculty, might be kept free from even the suspicion of unfair methods. If this is not possible how can we hope that our graduates will prove ethical in the keener competition that results from the struggle for existence. The teaching value of this scheme, moreover, has proved so great that we are not concerned about possible future dangers which as yet have given no sign of appearing and may never appear. A plan which leads engineering students voluntarily to make visits of inspection, sometimes at considerable distances, for the purpose of seeing a machine or structure of the general type called for by their problem, a scheme which influences them of their own free will to spend their Easter recess on problem work, a plan which, makes the student think independently along the lines of his future work is worth the risk of a few dangers which may prove, and ought to prove, purely imaginary. Our students study engineering and think football. Our experience with the competition has proved it possible to induce them to think engineering as well as football and to us, therefore, the plan has commended itself.

While "the engineer must be born, not made," to quote the paraphrase of a familiar saying, it is also true that upon the effectiveness of his educational training depends in a large measure his efficiency in his profession. Every available factor must, therefore, be utilized. It has accordingly seemed worth while to discuss this question and to present these results of our cooperation with our local engineering society. While we doubt the effectiveness of a cooperative system which puts either on an industrial organization or upon a practicing engineer the tasks of instruction which belong to and require the trained teacher, we do believe that a scheme which utilizes alike the experience of the trained engineer and the expert knowledge of the teacher, each in his own field, will produce effective results. It has been this belief which has been the basis of our experiments in cooperation.

COOPERATIVE WORK IN INDUSTRIAL PLANTS IN CONNECTION WITH ENGINEERING EDUCATION.

By LOUIS E. REBER,

Dean Extension Division, University of Wisconsin.

During a period of over 25 years, which terminated about 8 years ago, the writer was employed as official head of the engineering school of a State college. In this relation it was frequently his experience to come into contact with practical men of affairs who expressed little confidence in the college bred man as valuable material for their use. They complained in speaking of the technical graduate that he labors under the delusion that he "knows it all"; can not be made to realize that he has anything to learn from the man whose training has been gained in practice. His education, they said, is too scattering; he does not grasp fundamental principles; the best way to train an engineer is by teaching him to do. On being shown well equipped college laboratories and shops as evidence of the practical nature of the technical courses, this was too often their response: "The college shop? It's not the real thing. How can a young fellow learn to handle men if his experience is limited to relations with college boys? How can he learn business methods from a pedagogue? No, no, they had no place for the academic theorist, their need was for men who had learned their business by working at it."

On the other hand, another group of employers was increasingly aware of the need for a better supply of workmen. Not only greater efficiency was demanded but a

different type of employe. Competition at home and abroad was keen. The average workman was deficient in constructive ability and judgment. Material was needed to fill positions of trust. It was necessary to find a source from which could be drawn men who had learned not only to do but also to think. The question became urgent as to where such men might be found, since it was common experience that the professional schools and colleges sent out a large proportion of self-satisfied theorists, while the workman trained only in the practical processes of his labor frequently developed little more than mechanical expertness.

The educator recognized the defects of the educational system no less than the employer, and the engineering student of that period was carefully warned of the pitfalls to be expected in his future experience. Among young graduates who came under my personal observation at this time there were a number who, with the assistance of their college advisers, surmounted the difficulty by entering manufacturing firms as beginners and working their way from place to place until they had gained the desired knowledge of the work at first hand and an acquaintance with laboring men and the conditions under which they work and live that could be secured by no other means. This practice was not limited of course to the graduates of any one institution. It became quite usual for men who had finished their collegiate training to apply for menial positions in factory, shop, or even the engine room of seagoing vessels, while many served their apprenticeship in the world of hard knocks by becoming salesmen. Not a few of the successful and well-known men in industrial positions today, graduates of 10 or 20 years ago, supplemented their engineering education by experiences such as or similar to these. This resource, however, was the privilege of those only whose obligations permitted them to postpone the time when they must establish themselves definitely and permanently. Additional years of training were frequently impracticable for the young man whose family had made sacrifices in order to aid him in securing a college education. On the other hand, there were few of the so-called more fortunate young fellows who could tolerate or believe necessary the plan of deliberately placing themselves on the same plane as laboring men. Of the two classes it was clear that the poor boy who as a rule paid part or sometimes all of his expenses, by working whenever and wherever he could, was the less in need of such practical training as could not be gained from the ordinary technical courses. The farmer's son who works hard all summer in the fields and does janitor service at his college in the winter is in little danger of becoming too narrowly academic and the student whose vacations are spent as chainman for a corps of engineers and whose odd hours in term time also are employed in wage earning, gains in some measure, at least, the valuable experience that comes only through the reactions between man and boss.

We had, then, as our best material the graduates who supplemented their college courses by one or more years of voluntary apprenticeship to labor and the undergraduates who were compelled to enter or continue in the school of work after their matriculation in college. The solution of the problem was adequate to a greater or lesser degree, but only for the few. It was important that means should be devised by which all of the students should benefit by this double-phased training essential to the making of the good all-around engineer. The full equipment of shops and laboratories, the employment of instructors who were graduates of both college and workshop, these were steps in the right direction, but as our practical friends pointed out, the real thing was not achieved. The college of engineering was confronted by the great problem of the educational world—how to make education real, and, though progress has been made in the past decade or two, this is still the great problem of the educational world—how to make education real.

Fortunately there have been developed in the several grades of the public educational system some conspicuous examples of breaking away from the old traditional influences for the purpose of relating school processes more directly with life. As

Dean Schneider has told us the University of Cincinnati, a municipal institution intimately connected with the organization of the city, is representative among schools of higher learning in having achieved an exceptional union of theory and practice. Her success in the training of engineers may be ascribed to several main divergences from the usual practice. In the first place a selective process by trying out by which many applicants are saved futile expenditure of time and application; second, a plan of wage earning, which helps the student to afford a period of education sufficiently prolonged to include a desirable amount of purely cultural study; and above all a system of cooperation between college and industry whereby the student working alternate weeks in classroom and shop, gains that highest desideratum of education, an intimate association of mental and manual processes by which both become real.

Though it is impossible for every technical school in the country to emulate the example of this leader in cooperative application, it will not be questioned, I believe, that this and similar departures have had salutary influence in modifying methods in even the more conservative institutions. The principle of educating by direct application of the lesson, whatever its nature, to life is in conformity with the newest theories. Vocational guidance has come to be generally accepted as a measure of human conservation. The greater economy of the school plant also and the socializing influence of the wider relations brought about through cooperation are topics that have aroused the interest of the modern educator in every department of his work. It has become the fashion to talk about training "the whole child." Even the most conservative and old-time educator has adopted the language at least of reform.

There are still those, of course, who warn that the cooperative method gives opportunity to "big business" to exploit education in its own interest, others who find the instruction given at the industrial plant not pedagogically good, or the student's work in the shop too much limited by the exigencies of routine, but these are minor difficulties, overcome with the spread of better understanding of the principles involved. The loaf rises slowly and only in spots, but the leaven is working.

The more recent experience of the writer in connection with the extension service of the University of Wisconsin reinforces his belief that technical training may be greatly strengthened by a well-devised correlation of the educational courses and the industries. The problem of university extension, however, is much more complicated and far-reaching than that of the engineering school. The latter being located in a large city, and surrounded by industrial plants, is insured a possible close relation between schedules of work and schedules of study. Its student body is within the walls of the institution, subject to the direction and control of its officers, and equal, or approximately so, in preparation and acquirements. In university extension, on the other hand, as developed by the larger State institutions, the student body is scattered throughout the State wherever men are employed in industrial pursuits and every possible disparity prevails in their preparation for study, in their ability, past experience, leisure time, financial situation, age, or any of the many conditions affecting their lives. And yet there are essential points of likeness between the two cases. In both a clear conception is requisite of the value to the employee (and inseparably, to the employer) of the related training, whether it be related by taking a student from his classroom studies to the shop or by carrying the classroom studies to the workman already engaged in remunerative employment. No employer can be expected to enter into a plan by which college boys shall be regularly employed in his works for brief periods alternating with classroom occupations who does not see clearly the value to the industries of men turned out under this method of education. Nor will an employer cooperate with the agents of university extension in bringing to the members of his force the opportunity for courses of study to be taken outside of hours of employment if he does not heartily believe that the principle is sound, the method practical, and the probable returns worth some sacrifice.

The similarity does not end here. Under the cooperative plan whether in secondary or college work, traditional methods are quickly abandoned. Much of the old unapplied study of textbooks meant nothing. When applications were made, this fact became at once apparent. As we have seen, the early college graduate was not fitted for positions of responsibility until after he had served an apprenticeship, a situation which held until apprenticeship or something like it became a part of his college course. University extension in dealing with the problems of method and text to be adopted in teaching the industrial employee found it necessary to make adaptations of like nature to those required under the collegiate cooperative plan.

The college student, it is said, continually turns the tables upon his instructor by bringing for solution in the class very apt and vital problems suggested by his work. In university extension similarly the instructor is frequently hard pressed to cover all the points raised by the employee whose mind has been opened by his lesson to a new appreciation of the significance of his manual processes. The instructor naturally is stimulated by the student's eagerness and ambition and the question of how much time may be devoted to an individual student in a single course opens a serious problem of administration, the necessity for imposing a limit arising, of course, from considerations of relative importance and economy.

Early in the development of university extension it became evident that good results could not be secured without a number of special texts adapted to the needs of the industrial student. Specialists were employed to write these books with careful reference to the needs of men already engaged in the work to which the text relates. The treatment in all cases is thoroughly practical, the manner as direct, simple, and clear as possible. Many of the volumes have been published and are offered for sale. These have been adopted for class work in 208 colleges. All are in demand. Is it not surprising that there should be so large a call from educational institutions for books prepared specifically for industrial employees? May not the fact be regarded as another testimonial to the superior value of that method of education which relates the lesson very definitely to work and life?

A main difference between the instruction under the collegiate cooperative plan and that offered to employees by extension arises from the fact that the collegiate course is necessarily to a large degree prearranged and definite and its industrial applications adapted to fulfill specific requirements, while instruction that is carried to the would-be student employee must be so flexible and comprehensive as to meet a wide range of conditions and needs. Cooperation in the latter case involves adjustment of the course of study to two variable quantities, the man and his work, for in courses conducted by university extension there are professional men of every rank, consulting engineers, bankers, physicians, lawyers, superintendents, managers; graduates and undergraduates; employed youths of all ages and laboring men and women in every walk of life. Whether the course shall be given through correspondence-study, lectures, or local classes depends upon the nature of the course and the preparation or preference of the registrant. A group of physicians may elect to hear lectures on immunity or preventive medicine, keeping in touch with modern medical advances; bank presidents and directors join their employees in courses conducted by specialists in money and banking; those of the younger groups who may be working for university credit take correspondence-study courses to great advantage. Students of a certain degree of advancement who are sufficiently ambitious to study in their leisure time do not need the stimulus of the class; they make better progress when unhindered by its necessary restrictions and get more from the written lesson and the teacher's written comments than from occasional limited periods shared by others in the teacher's presence. On the other hand, employees who are poorly prepared for study and unused to mental effort require an intimate relation with the teacher, his support, encouragement, and work of mouth assistance. The local class admits of very close application of the lesson to the work. Even under discouraging conditions excellent

results are secured. It should be observed that this is continuation education, carrying the student further and further in his work as he finds himself prepared to advance. Every effort is made to stimulate him to take up in addition to the narrowly technical studies subjects which will be broader in their educational value and wider in their application and to build course upon course progressively. Steam engineering, for example, starts with the study of firing and of boilers. It leads into more intensive study of steam engines, heat, power-plant economics, etc. If the man develops the ability and interest, he may continue indefinitely.

Through this cooperation of university and industry the outlook of the employee should be broadened, his judgment ripened, efficiency increased, and ambition so satisfied that contentment rather than disaffection results from his studies. It has failed of its aim if the employer does not recognize that the standard of his men has been raised; that it is no longer necessary to import from outside those who are fitted for the highest positions in his business; and that from the point of view of economy he can well afford to give employees time for their classes, place for study, and every encouragement in his power.

Doubtless to many, cooperation between university and industry, carried so far as to extend university service outside the boundaries of academic traditions, savors of the lowering of ideals. Yet to those who have watched its development the plan as a whole seems worthy; in step with the great national purpose to beget a high level of citizenship by giving to every man an opportunity for growth and self-expression; in a word, to make men.

Adjournment.

SESSION OF SUBSECTION 7 OF SECTION IV.

NEW WILLARD HOTEL,
Tuesday morning, January 4, 1916.

Chairman, W. C. BORDEN.

The session was called to order at 9.30 o'clock by the chairman.

The committee on resolutions reported to the subsection the completion of its task, with the statement that the resolutions to be reported had been submitted to the executive committee of the congress for action.

The chairman announced the first speaker, Dr. Augustus S. Downing, of the University of the State of New York.

Dr. DOWNING. When the subject was presented to me, it was with a view of making a complete whole of three papers. The first was to be on the State control of medical licensure as typical of State control of all the professions that have to do with the supervision of public health, e. g., medicine, dentistry, pharmacy, nursing, etc., for whatever procedure is right in State control of the medical profession is equally correct in the control of every other profession that has to do with problems of public health. It was further suggested, because of the many years that New York has been developing a system of State control of medical licensure, that there should be presented here a concise but complete statement of the procedure that has been adopted in New York and the fundamental principles underlying such procedure, to the end that the South American States—and I would include Canada as well—unite in a plan for the direction of all matters pertaining to licensure. I should make it broader than for the Pan American Republics or Pan American Congress: I should make a plan for all of the institutions in the Western Hemisphere in order that they might adapt this outline to suit themselves. All of the gentlemen here are perfectly familiar with our procedure. There are some things here that are of interest because they deal with failures—Austria, for instance—in undertaking to recognize the licensure in other countries.

STATE CONTROL OF MEDICAL LICENSURE.

By AUGUSTUS S. DOWNING,

Of the University of the State of New York.

For intelligent discussion of State control of medical licensure it is essential that the point of view be early defined.

Only such historical references will be made as shall set forth the experience of the State of New York. It will be my earnest effort to impress upon the Pan American Union the importance of formulating possible plans for mutual agreements regarding professional practice in the several countries of America—Northern, Central and Southern. The discussion will include the greater political divisions of the Pan American Union and such other political divisions as at present are not members of the Union.

The conservation of public health is properly a function of every government. Public health in its broad interpretation involves all the problems of medical practice, dentistry, pharmacy, nursing, etc., and any conclusions concerning medical licensure are equally pertinent to all licenses that affect public health. This proposition is so generally accepted on the American continent that it needs no demonstration. Not only has each of the 53 political divisions of the United States a board of medical examiners and a board of health, but the Dominion of Canada, through its medical council, examines physicians and establishes qualifications to practice in any province of the dominion, while each of the 10 provinces has its separate examining board—Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, Quebec, Saskatchewan, and Yukon. The Bahamas and Bermuda have examinations for entrance to the practice of medicine and registration of the licensed practitioner, as well as British Guiana, Jamaica, the Leeward and Windward Islands, and Newfoundland. The unsettled conditions of Haiti, Mexico and Santo Domingo render it impossible accurately to affirm the conditions in these countries. In Central America there is evidence of governmental requirements in Costa Rica, Guatemala, Honduras and Panama, and presumably, Nicaragua and Salvador. In South America, so far as available records show, there seems to be no governmental boards of medical examiners. Brandon, in his "Latin American Universities," says:

"The faculty regulates the practice of medicine * * * it is an administrative body as well as a teaching staff * * * as the representative of the State it conducts the examination that entitles the student to the privilege of practicing his profession * * * it is also empowered by the state to make regulations governing the practice of medicine throughout the nation."

Every prominent country of the continent has enacted legislation in the interests of public health, but the laws in extent of control and variety of procedure differ as greatly as the number and forms of government.

The careful observer, however, soon discovers certain common underlying principles:

First. The laws for admission to professional practice are first made for the more densely populated portions of the Commonwealth and then are made to apply to the entire State—from city to county and from county to State. An act of 1760 regulated the practice of medicine in New York City; that of 1792 included the city and county of New York; that of 1797 affected the whole State.

Second. Requirements for professional practice affect both the professional schools and the profession. For nearly 100 years three forces contended in New York State for control of the licensing of practitioners of medicine: First, the medical profession, through its county and State societies; second, the medical colleges; and, third, the regents of the University of the State of New York. The power of county societies to license, through their boards of censors, continued uninterruptedly from 1806 to 1880, varying in accordance with the statutes from time to time enacted. From 1770 to 1806 the degree of a medical school was a license to practice. This power was suspended by the law of 1806, and for three years the medical societies had exclusive control. By the law of 1809, however, graduates of medical schools having a degree granted by the regents were entitled to practice. For the greater part of the nineteenth century there were two sources from which a license to practice emanated: (a) A diploma of the regents; (b) the license of the State and county medical socie-

ties. This dual control—and, in fact, triple control, as the medical-school degrees were gradually given the force of licenses—continued till 1880, when the power to license medical practitioners was vested wholly in the regents.

Third. Advancing licensing requirements of a State carry with them *pari passu* general education and professional education.

Fourth. Any advance in requirements by one country or State affects similar interests in neighboring countries and adjacent States. In July, 1912, there was held, in London, England, a congress of the universities of the British Dominions. The secretary of state for the colonies, Mr. Harcourt, said:

“When I was of undergraduate age, who amongst my contemporaries would have believed that in 1912 it would have been possible to call a congress which would contain, as this does, the representatives of no less than 53 universities under the British flag?” Immediately following this congress active advance in professional education became apparent in the colonies, and New York State is at present in correspondence with the administrative officers of five governments of the British dominions regarding the advancing requirements for admission to medical practice in those political divisions.

Education—academic and technical—is held to be not only the most important factor in all problems of public health, but is a prerequisite for their right solution. As this congress contemplates progress by Americans, the present result of American education is here set forth in the words of President Sharpless, from “The American College,” published in 1915:

“American education succeeds, as that of no other nation perhaps has done, in creating a strong, self-respecting, well-informed, independent, common man, with all the virtues and limitations which the common man in mass has. He is urgent to right wrongs by the most direct, if not always the wisest, methods. He has prejudices against the unusual which are hard to remove. He fights his battles bravely * * * He is slow to accept the experience of others, and tries out problems by means which have often failed in the past, and which more knowledge would induce him to discard; yet, because he is sincere and honest and brave and intelligent, he accomplishes real progress, even if sometimes blundering and spasmodic.”

The recognition of these American characteristics will solve the problems of concerted State control of medical licensure on the American Continent. If the Governments here represented can be persuaded to accept the experience not only of America but of Europe as well; if you can be induced to try out these problems, not by the means that have failed in the past but with knowledge and experience from present successes, real and continuous progress will ensue.

Under our present forms of government education lies with the States, and not with the National Governments.

THE UNIVERSITY OF THE STATE OF NEW YORK.

This university is unique, in that it is a State department of education as well as a State university; in that it has a continuity of educational history exceeding the duration of the National Government; in that it is an educational government of the republican form, with the three coordinate branches—legislative, executive, and judicial.

Chartered at the close of the Revolutionary period, it voiced the aspirations of the leaders in the Commonwealth; based on English ideals, it was materially modified by French influences. In its growth of a century and a third it records in permanent form the ideals and the practical attainments in education of an imperial State. The university is governed and all its corporate powers are exercised by a board of 12 regents, serving without salary, whose elective officers are the chancellor and vice chancellor, whose executive officer is the president and commissioner of education. Under such name, with such powers, and subject to such limitations as the regents

may prescribe in conformity to law, the regents, by an instrument under their seal and recorded in their office, incorporate universities, colleges, academies, libraries, museums, and other institutions or associations for the promotion of science, literature, art, history, or other departments of knowledge or of education in any way. No institution or association that might be incorporated by the regents may be incorporated under any other general law without their consent. The regents or their representatives visit, examine into, and inspect the institutions in the university, and require annual reports from the various institutions. They register both domestic and foreign institutions in terms of New York standards, fix the value of degrees, diplomas, and certificates issued by other States and countries and presented for entrance to schools, colleges, and the professions in New York State. Their examinations furnish the standard of graduation from the secondary institutions and of admission to colleges. They supervise the entrance requirements to the professional schools and conduct the professional licensing examinations. Certificates or diplomas are conferred by them on students that satisfactorily pass the academic examinations, and licenses are issued to those that satisfactorily pass the professional examinations. They confer certificates, diplomas, and degrees. The buildings and offices of the department are maintained at State expense and are occupied exclusively by the university, including the various departments and divisions. It is not a teaching institution, but is in the fullest sense an institution for the administration of education and professional laws, and for the stimulation of right educational opinion among the people. The institutions of the university include all elementary, secondary, and higher educational institutions which are now or may hereafter be incorporated in the State, and such other libraries, museums, institutions, organizations, and agencies for education as may be admitted to or incorporated by the university.

It is from the outlook of this university *sui generis* that I address you to-day. I would persuade you to avoid attempts that have failed, as shown by the experience of other governments. Based upon the experience of my own State, I shall endeavor to formulate for your consideration possible plans for mutual agreements between all the States here represented.

(1) Nostrification—the acceptance by a university of the diploma of a foreign university as of equal value with its own. Naturally this problem only arose when the diploma was at the same time a license; hence the problems of nostrification are likely to arise not only between South American States but between them and all the other members of this union, if my quotation from Brandon's "Latin American Universities" accurately portrays present conditions in South America. Inasmuch as the examinations for doctor of medicine in Austrian universities were also State examinations for authority to practice medicine, and it was the rule that every legal practitioner must pass the *rigorosum*, a much-argued question arose as to the conditions under which a native or a foreigner that had studied at a foreign university could secure the right to practice medicine in Austria. Many Austrians of German parentage wished their children educated in German universities, but the German university did not conduct licensing examinations, and such students returning to Austria could not enter on professional practice. Immigrants to Austria could not secure citizenship and enter on medical practice without encountering serious hardships. Though the rule protected Austrian institutions the pressure was too great, and it was decreed that Austria should allow native students their attendance on non-Austrian universities so long as there was no doubt that the certificates of attendance met the requirements for admission to the State's examinations—the acquirement of a degree and attendance on the lectures in all the professional subjects prescribed by the Austrian university. Thus the Austrian attempt to solve this problem failed; but the influence of the discussions was seen in Germany, where higher professional

requirements were subsequently demanded, and in France, where university courses leading to degrees were thrown open to foreigners. New York tried this same plan and failed.

(2) Reciprocity—the equality of medical licensure. Under the influence of the favored-nation clause applying to trade and commerce, the attempt was made in several of the United States to enter into reciprocity relations regarding medical licensure. Statutes at the time this experiment was in progress provided for the indorsement of licenses without examination if the State from which the applicant came granted equal rights and recognition. This was impossible, for the reason that some States maintained higher requirements than others, and the attempt failed.

(3) National control of medical practice. A report of the present experiment of national control in the Dominion of Canada led to the following statement:

“About 12 years ago I wrote a paper advising a national board of examiners. It very soon became apparent that a compulsory national board was impossible, since it was contrary to the Constitution of the United States; in other words, the licensing of physicians is a part of the police power which rests with the States, and not with the National or Federal Government. It then occurred to me that the difficulty might be overcome by establishing a voluntary national board, whose standard would be so high that it could consistently be recognized by all of the States. I regret to say, however, that many of the State boards did not at that time seem willing to in any way abrogate or abridge their authority or to recognize a central or Federal board, so that the matter was dropped.”

The voluntary, the national, and the international administration of medical licensure appearing impracticable, it remains to determine the extent of State control.

The State should prescribe the minimum legal requirements; the medical school should determine the maximum scholastic. From the beginning the regents of the University of the State of New York have incorporated medical schools. The present requirements for an absolute charter are as follows: “No educational institution shall be given an absolute charter by the regents of the university unless it has the following resources: For a college, \$500,000; for a medical school, \$50,000 * * *.”

Again, no institution for higher education shall be incorporated without suitable provision, approved by the regents, for educational equipment and proper maintenance. The regents having approved and chartered a higher institution permit it to exact as much higher requirements than the legal as the institution's administrators think best. For example, Cornell University, with power to confer degrees, having the minimum resources and suitable provision for educational equipment and proper maintenance, organized a medical department. It was not satisfied to exact the minimum legal requirement only for admission—a State medical-student certificate—but in addition thereto requires three years of college work. The regents not only permitted this procedure but encouraged it because the institution had sufficient funds to work out an experiment that might have proved disastrous to a less highly endowed school.

Under the influence of national leaders in medical education it was proposed to require college graduation for admission to medical schools—an ideal that will ultimately become a reality if sufficient time be allowed for the education of public opinion and for sound counsel to prevail. When it was proposed to New York that this standard become the legal requirement for admission to medical schools and to the medical licensing examinations, it was confidently affirmed that the requirement could not be legalized nor if legalized could it be put into effect. In New York's experience it had taken nearly two decades to raise the requirements from a three-year high-school preparation for admission to a four-year high-school requirement without conditions. And I should not come far from the facts were I to say that a small per cent of the medical schools exacting two or more years of college preparation for admission actually exact that requirement as measured by New York standards.

Surely, if some of the best-equipped schools of the United States, second to none in the world, can not successfully maintain such advanced requirements, it is futile to attempt to make them the legal requirements of all Commonwealths.

Two definite minimum educational requirements have developed in New York State: First, a general education preliminary to the study of medicine; and, second, a minimum course of professional study. The latter requirement, we have seen, is older than the State government itself and is thus worded in the medical law. Medical school means any medical school, college, or department of a university registered by the regents as maintaining a proper medical standard and as legally incorporated. * * * The regents shall admit to examination any candidate * * * that has studied medicine not less than four school years, including four satisfactory courses of at least seven months each, in four different calendar years in a medical school registered as maintaining at the time a standard satisfactory to the regents. Very early in the experience of the regents a necessity for a general education preliminary to the study of medicine became apparent, and this necessity was an important reason for committing medical licensure to the regents. The transfer to the regents was more easily accomplished by reason of the public's confidence in their administration of the academies, their experience with examinations, their permanence of policy, and their freedom from partisan politics.

The problems of New York State, faced by the regents in 1880, are well worded for the United States by President Sharpless in 1915: "The curriculum of the college is based on the work done in the preparatory schools. How to test this preparation in a way satisfactory to both school and college is one of the unsolved problems of education in the United States." Again he says: "The request in its baldest form amounts to this: That any subject seriously taken in school should be accepted at its proper valuation by the college, and that simple graduation from a good high school should be the only prerequisite for entrance."

The regents' experience in the solution of these problems of professional and general education for New York State is best shown by an epitome which is chronological between the fixed dates, 1880 and 1915 for admission to the regents' professional or licensing examination in medicine. (See Schedule A for details.) I give the earliest and latest.

First, a general education preliminary to the study of medicine, plus a professional course.

Seventh, 60 counts—45 set, 15 selective (three sciences required)—or a four-year high-school certificate, including the set, selective, and required subjects, plus unconditional matriculation in a registered medical school providing six full-time professors at adequate salaries, plus a four-year professional education, plus an M. D. degree from a registered medical school or from an accredited and registered medical school.

From this epitome the regents' influence and their progressive advancement of professional requirements become apparent. The State must supervise the schools and prescribe the requisites for licensure. Prescribing the minimum requirements by the State carries with it obligations to protect the institution as well as the general public. When the legislature amended the medical-practice act in 1907 and not only refused the osteopaths a separate board but consolidated with osteopathy the three existing medical boards, it placed upon the regents the duty of justly and adequately protecting four groups of schools chartered with legal rights and possessing property interests. For example, there were physicians legally practicing in the State that had been licensed by the eclectic board which met all the requirements of law, including the general education preliminary to the study of medicine and graduation from a registered medical school.

The amended act provided for the licensing of osteopaths and the registration of osteopathic schools, provided that they meet the same requirements exacted of other licensed physicians and other registered medical schools. Neither the legislature nor

the regents contemplated prohibitive requirements. They simply exacted minimum requirements of all who would legally practice medicine. The economic law of supply and demand has made it impossible to establish an osteopathic school in New York and has caused the attempt in a neighboring State to fail. But neither failure warrants the suppression of the attempt Chicago is making to maintain an osteopathic school that can be registered as meeting all the requirements exacted of other registered medical schools.

(1) *Supervision*.—Supervision is authoritative direction; it is not inspection, a strict or prying examination; nor is it surveillance, a close or prying watch; though all three are synonyms of oversight, watchful care.

(2) *Visitation*.—"Subject to the visitation of the regents" is a phrase from the original education law that has been incorporated in the charters granted by special legislation, and the definition of this term will more clearly set forth its content than any description I may give. "Visitation is the act of a superior officer who officially visits a corporation, college, etc., to inspect the manner in which it is conducted and to see that its laws and regulations are observed and executed."

When the question of the relation of the university to the legislature was under discussion before a constitutional convention the powers of a board of visitation were set forth in detail.

"A visiting board must look after the execution of the subsidy as well as of the charter, and in doing this can hardly fail to exert a positive influence over the whole system of instruction."

"If it does not command or even positively direct, it may make itself felt by advice, which will often be sought, and will seldom be disregarded.

"A visiting board may properly exercise this power under general rules. * * *

"The powers and duties with which a board of visitation of the colleges and academies of the State should be invested may be enumerated:

(1) The exclusive power of incorporating colleges and academies under general regulations.

(2) The power to require reports, under forms to be prescribed by the board.

(3) The power to make special investigations as to the affairs and condition of any institution.

(4) The power of personal visitation by its committees or officers, and of adopting such measures as are calculated to improve the character of academic and collegiate education.

"The exercise of coercive power by such a board, and the infliction of penalties, will seldom be required, nor would it be salutary."

In this quotation you will observe the provision for the regents rules and regulations that have the force of statute law in this State; the provision for reports, both annual and special; and the provision for inspection. The provision for special reports takes the form of a formal application for incorporation and for registration. The inspection for incorporation and for registration may be performed by the regents, their committees or officers, which lead to such measures as in the judgment of the board are calculated to improve the character of education. The judgment of the board is a formal act reached on due deliberation, and is recorded as such in the journal of regents' meetings

Present tests.—Whether New York State has solved the problem of testing preparation in a way satisfactory to both the schools and the colleges of the State, time alone can tell. The continued adoption of New York standards by other States and institutions seems fairly conclusive evidence of the successful solution of the problem. In general terms, New York's tests are institutional for promotion, evidenced by diplomas; State for protection, evidenced by licenses.

(1) *Elementary*.—The evidence of the successful completion of the test is the regents' preliminary certificate issued by the assistant commissioner for elementary education.

(2) *Secondary*.—The evidence of the successful completion of the tests and the course is the regents' academic or college preparatory diploma issued by the assistant commissioner for secondary education. The evidence for promotion to a higher institution of arts and science may be the certificates of the secondary school principals, the regents' diplomas, or the examinations of the higher institution. For promotion to the professional schools of the State a qualifying certificate is required. This may be obtained by the successful completion of an approved course in a registered secondary school, by regents' academic examinations in set, selective and required subjects, or by school attendance supplemented by academic examinations. The qualifying certificates are issued by the assistant commissioner for higher education.

(3) *Higher*.—The four-year college course, preceded by the four-year secondary course, is pursued in the colleges of liberal arts and science for men, for women, and for both men and women. Promotion in the higher institutions is based on institutional tests, and graduation is evidenced by diplomas certifying to the degrees attained, which are issued by the executive officer. Protection is given the higher institutions through formal registration by the regents; protection is given the public by professional examinations prepared, proctored, and certified by the regents. Licenses are issued by the commissioner of education and registered in the county of practice.

Conclusion.—For convenience of reference, my conclusions regarding State control of medical licensure are found in the following abstract:

ABSTRACT.

(1) The protection of the public is properly a function of government.

It is so recognized in greater or lesser degrees by all Governments on the Western Hemisphere,

One form of this governmental protection is licensure—the legal right to practice medicine.

Medical licensure has developed along well-defined lines.

Governmental control first affects more densely populated areas.

Advancing requirements affect institutions and practitioners.

Licensure increases general education and professional.

Its advance by a State involves adjacent States.

(2) Education is the most important factor in the problems of public health.

American education succeeds in creating a strong, self-respecting, well-informed, independent, common man.

He is slow to accept the experience of others.

He tries out problems by means that have often failed.

Because he is sincere and honest and brave and intelligent he accomplishes real progress.

(3) Under our present forms education lies with the State and not with the National Government.

The University of the State of New York.

Nostrification, the acceptance by a university of the diploma of another university as of equal value with its own.

New York State tried nostrification for a period of years and abandoned it.

Reciprocity, the equality of medical privileges.

New York indorses a license not as a favor, but because earned on equal or higher requirements.

National control of medical practice impossible.

As a police measure it lies with the State and not with the Federal Government.

As a voluntary act it lacks the sanction of law.

(4) The State must prescribe the minimum legal requirements.

The institution should determine the maximum scholastic.

Two definite lines of minimum educational requirements.

A general education preliminary to the study of medicine.

A professional education in a medical school meeting minimum requirements.

Epitome of the regents' experience.

(5) The State must supervise the schools and the tests.

Visitation.

The powers and duties of the regents in their visitation of the colleges and academies.

Regents' rules and regulations have the force of statute law.

The judgment of the board is a formal act.

Supervision, authoritative direction.

Not inspection, a strict or prying examination.

Not surveillance, a close or prying watch.

Cooperation through the medical council.

Approval of State board findings.

Protection to the schools and students.

(6) Present tests: New York has solved the problem of tests.

Institutional for promotion; State for protection.

The evidence of promotion, the diploma; the State's protection, the license.

Of the eight-year elementary course, State examination, the preliminary.

Of the four-year secondary course, the regents' examinations, the academic.

Regents' diplomas admit to colleges of liberal arts and sciences.

Regents' certificates admit to professional schools.

Diplomas evidence graduation from four-year college courses and the degree attained.

Licenses evidence the right to practice medicine.

Schedule A.—Epitome of the regents' experience in the advancing requirements of a general education preliminary to the study of medicine between 1880 and 1915.

First, a general education preliminary to the study of medicine, plus a professional course.

Second, regents' academic examinations in set subjects, plus a three-year professional course in a registered school.

Third, regents' academic examinations for 45 counts, plus a three-year professional course, plus a medical degree from a registered school.

Fourth, 45 counts or a three-year high school certificate, plus a three-year professional education, plus an M. D. degree from a registered school.

Fifth, 60 counts or a four-year high school certificate, plus a four-year professional course, plus an M. D. degree from a registered medical school or from an accredited medical school supplemented by at least one year's resident study in a registered school.

Sixth, 60 counts—45 set and 15 elective (special English examination required of foreigners), or a four-year high school certificate including set and selective subjects, plus a four-year professional education, plus an M. D. degree from a registered medical school or from an accredited and a registered medical school.

Seventh, 60 counts—45 set and 15 selective (three sciences required), or a four-year high school certificate including the set, selective and required subjects, plus unconditional matriculation in a registered medical school providing six full-time professors at adequate salaries, plus a four-year professional education, plus an M. D. degree from a registered medical school or from an accredited and registered medical school.

The CHAIRMAN. I am sure that we all have enjoyed hearing this paper. Dr. Downing's most excellent paper is open for discussion.

Mr. LAMBERT. I agree with most everything the speaker has said. If Dr. Downing can assure us that the training in osteopathy is really as good as the minimum requirement for other institutions, then there is very little to be said.

Mr. DOWNING. There have only been five osteopaths, I think, admitted to practice in the State of New York under the present law since 1907. They were men that came up and took the licensure examination, showing that they had the minimum requirement so far as the examination could show it, and they were from schools that do give, as nearly as we can determine, the minimum requirements. In 1907 there were more than 150 so-called osteopaths that were refused licenses because the board would not certify them, and since 1908 I have had to oppose 80 of that 150 who banded themselves together, and each paid \$2 or \$5 to an attorney to prosecute their case in the courts. About three years ago we finally settled the matter forever and always so far as those 80 were concerned, although the other 70 never made any effort. We simply went from one court to another right to the court of appeals and proved to them that they were really not entitled to practice under the law. As far as the State control of osteopathy, allopathy, or homeopathy is concerned in the State of New York, it is absolute. May I, just for the benefit of the physicians here, tell you what I saw in California in this matter of osteopathy and how differently the States undertake to help public health. A school there claimed that it was eligible for registration, that it met all of the minimum requirements, that it has the full equipment, professors, and all that, and that it has a four-year course. I did not visit the school last spring when I was out there. The result was that some one reported that I had been on the coast and had ignored their application time and time again, and they demanded registration. I knew that they could not be registered, and I went from San Francisco to Los Angeles purposely to visit that school. They could not be registered at the very earliest prior to 1918, because they did not meet the minimum educational requirement exacted by our law. Second, the greatest surprise to me was that they were teaching and performing surgical operations and practicing every other phase of medicine that is known to the medical profession. It was a well-equipped institution with good laboratories, good hospital, and all that. The institution was well equipped as far as the facility for giving instruction was concerned. But what startled me most was when I went into the operating room to see its equipment, to find a boy, 6 years old, on the table and a nurse and an osteopathic assistant giving him ether. And I said: "Is that allowable under your law?" And the man said, "Yes; certainly it is." I said, "What is going to happen to us." He wa-

going to remove the tonsils of the child. He wanted me to remain and see the operation—see how beautifully this man operated—but I did not have the time to do it. I really didn't have the time as I had two other institutions to inspect in the city, so I declined to stay to see it. The State of California permits an osteopath to perform surgery of all kinds, major and minor surgery as well, and its law is, as far as requirements are concerned—educational requirements—nothing below ours.

Mr. LAMBERT. That is not osteopathy in the New York definition.

Mr. DOWNING. Not at all. Consequently my paper says that the State must control. There are certain fundamental underlying principles, and we lay them down there.

Mr. REED. I have been impressed with the papers and discussion because it confirms the conviction which I have entertained for a number of years with respect to this subject. Practically the entire difficulty in establishing any reasonable minimum, uniform regulation has come from an effort to translate some system of therapeutics into the statute books. We were very much opposed. Let us speak with frankness and with modesty: we were in possession of the field and challenged all oncomers. The first effort to establish so-called regular therapeutics and translate it into the statute books occurred in Illinois. It was followed by New York. The first rational legislation on that subject occurred in the State where there is no denominationalism, where there is no such thing as homeopathy, osteopathy, allopathy, or equally discouraging "opathy." That happens to be the State of Alabama, and the State of Alabama was rational because it did exactly what the essayist, as I understand the essayist, recommended. It insisted upon a familiarity with the fundamental knowledge of medicine: fundamental physiology, chemistry, bacteriology, surgery, and obstetrics. It pays no attention to therapeutics. It never enforces an examination in therapeutics of any kind. It proceeded on the theory that the individual who had taken a course of instruction covering these and similar subjects had thereby acquired a knowledge of them, and that those subsidiary questions might be left to his judgment and discretion. What has been the result? There is no "path" in Alabama. There is no denominationalism in medicine in Alabama. And they have taken up that same subject in Colorado and are carrying it out.

When we get to that point we will stop the multiplication of special examining boards and we will leave these questions to the schools, insisting simply upon the essential knowledge a candidate needs, knowledge that is essentially fundamental, and that ought to be possessed by every individual who approaches the problem of treating disease. I think the position taken by the essayist with respect to the horrible example of osteopathy is good. The whole country

is full of such examples. But under the influence of State supervision and under the influence of what is far more pertinent than State supervision, namely, the influence of an enlightened public opinion—that is the whip and lash that does the business—I say under such influences all these schools of irresponsibles, illogical in their conception, unscientific in their methods, have been whipped into some kind of form until they are doing some kind of good work. A gentleman once came into my office from quite a distance and brought a very interesting case. He gave me the history of the case and said: "It is something that I really can not classify." He stated that he had had consultations on this question and had been unable to get at it. We went over the entire case in my office, and he told me all about it and that he had found thus and so to be true. The consultant that brought the case to me was an osteopath. That is a different type of man. That would occasion a different kind of a protest, because by taking this man into consultation I perpetrated the crime of conferring with an intelligent osteopath. Now I believe that the need to-day is to enforce a minimum requirement and stop trying to write your therapeutics in the statute books. Get your foundation laid on that and everything follows without the slightest difficulty.

Mr. DOWNING. Mr. Chairman, I am going to say that that is just the practice in New York. We have no osteopathic board; we have no homeopathic board; we have no allopathic board. We have a board of medical examiners, and every man and woman who wants to practice in the State of New York must take the identical examination. We do not know, unless we consult the application blank of the candidate for admission to the licensing examination, what school he has attended or anything connected with him, but we have to know that under the law he has had satisfactory courses in four different calendar years, each course being not less than so many months, and that before he began the study of medicine at all he had at least a high-school education and a year in physics, chemistry, and biology. When I said there had been only five or seven osteopaths, it was merely because that number had happened to come to my notice who wanted a D. O. degree instead of an M. D. When we came to issue the licenses we found from the application blanks that they were graduates of a certain school, and consequently they got a D. O. degree instead of an M. D., and the State has arrived at that control. We haven't any examination in therapeutics, and we haven't had since 1907.

The CHAIRMAN. The next paper is "The development of a fifth year in medical education in the United States," by Dr. Samuel W. Lambert, of New York.

DEVELOPMENT OF A FIFTH YEAR IN MEDICAL EDUCATION IN THE UNITED STATES.

By SAMUEL W. LAMBERT,

Dean College of Physicians and Surgeons, New York, N. Y.

The old proprietary medical school of 35 years ago in this country taught medicine very badly as viewed by modern standards. There was no attempt even to demonstrate the foundation sciences in laboratories which, except for the dissecting room and the study of autopsy material, scarcely existed. Chemistry and physiology were taught in lecture rooms only, while bacteriology and pharmacology were not even discovered. That physicians and surgeons of any ability were trained at all was due entirely to the presence on the teaching faculties of great personalities who dominated by their precept and their example the fields of clinical medicine and clinical surgery. Those early schools taught the theory and the practice of medical and surgical art well, so far as they could be taught in the lecture room and at the bedside in hospital wards. A fixed and graded course of instruction of three years' duration was generally adopted about 1886 coincident with the development and addition of laboratories for teaching the basal sciences of physiology, bacteriology, histology, physiological chemistry and pharmacology. The course was increased to four years in most schools in the early nineties, at which time the great modern development in the specialties of medicine was added to the curriculum. Strange as it may seem, the chief objectives of a medical education, general medicine and general surgery, remained nearly stationary so far as methods and time allotted to them are concerned until they came to represent a minor portion of the curriculum in most medical schools.

About five years ago many schools began to realize this anomalous condition, and in order to return to the more normal conditions existing before the invention of surgical specialties, these fundamental clinical subjects were placed again in a proper relation to the rest of the work of medical education. In conjunction with this reform a more intimate relationship with the general wards of the hospitals has been added to the medical curriculum and the system of clinical clerkships based upon the English plan has been developed in many schools. It is not fair to criticize the amount of time devoted in the present four-year course to either the basal laboratory sciences or to the various specialties of medicine or to the fundamental clinical branches, while the total time needed to fulfil the requirements established by the universities and in some States by the medical practice acts demands of medical students a greater amount of time than it is possible for them to devote to their education without incurring a really measurable menace to their health. The requirement of 4,000 hours of classroom work divided into four annual courses of 30 weeks each amounts to more than six hours a day. In some universities the requirement exceeds this minimum, which has been fixed by the law of several States. If the content of the science of medicine requires such a devoted apprenticeship from its followers, it is fair to conclude that the four-year course has become inadequate to meet the demands for a curriculum which shall teach medicine adequately on modern lines.

Medical education has reached this stage of its development under the influence of several governing agencies. The medical schools themselves have come largely under university control and these schools of high grade have been the most potent factor in improving medical education both by raising the preliminary standards and by improving the methods of instruction and the facilities for education within the schools themselves. A second factor of equal importance and of the greatest possible importance in reducing the number of the low-grade schools which have existed in the United States, has been the council on medical education of the American Medical Association under the leadership of its chairman, Dr. Arthur Dean Bevan. This body has held annual conventions during the past 11 years and has been the most

active agent in the elimination of low-grade schools and in the struggle for higher standards in medical education. The work of this council was ably seconded by the report of the Carnegie Foundation for the Improvement of Teaching, issued in 1911. The third factor for the improvement of medical education has been found in the State Boards of Licensure.

The work of these three bodies have usually been in harmony, but the most recent development would seem to indicate that the State boards were pulling somewhat apart from the schools, and from the general profession as represented by the council on medical education. There seems to have arisen a sort of rivalry between various State examining boards to place their particular State on a somewhat higher plane of education and requirement for licensure than is the practice in other States. As long as the State legislatures followed the lead of the council on medical education and prescribed the methods of examination and qualifications of preliminary education, no special harm was done, but when various States began to prescribe the curriculum that should be taught in the universities their action gave rise to endless difficulty and they were usurping functions which might more properly have been left to the universities. The recognition of the inadequacy of the present four-year curriculum to give a competent medical education without detriment to the health of the medical student is primarily a university and not a State matter. Nevertheless various state legislatures have empowered their boards of medical examiners to correct this error in modern medical education by prescribing a year's hospital practice upon the house staff of some approved hospital as a prerequisite for admission to licensure examinations. By this action these States have removed a year of necessary training from the control of the schools of medicine and placed it in the hands of hospital boards, which, in the past, have been more concerned with the care of their patients than with developing the educational opportunities that are inherent in every hospital service. It would seem to be an amusing paradox if it were not really a serious matter, that any State should require a year's practice of a prospective physician before admitting that physician to an examination to test his fitness to perform the work of administering to patients in medicine and surgery. Several universities have followed blindly the State examining boards in requiring a year's practice in some recognized hospital as a prerequisite to receiving their degree of M. D. It would seem that such action of accepting a year's work without university control other than a more or less thorough examination of the hospitals involved is a bad educational procedure.

The necessity for adding a fifth year to the present four-year medical course is undoubtedly granted by all students of medical education, but such a year when added should remain under university control and should result in a relief to the crowding of the present curriculum. The student in his added fifth year should receive under the supervision of university officials the equivalent of the last of the two years of a hospital internship as at present administered and not merely the ordinary first year as now made up in most hospitals, entirely of laboratory and subordinate work without responsibility. This fifth year should give the student of medicine in addition to a year of clinical work and training in hospital practice, an extension of his opportunity for training both in the laboratory subjects in the first years of his course and also in the specialties of medicine during the second two years. Finally, and of great importance, this proposed extension of time in the curriculum should secure to the student a certain amount of leisure during his whole course in medical education to be devoted to reading outside of the regular curriculum. The recent graduate in medicine should receive in a properly organized five-year course of study an opportunity to assimilate a broad view of the whole field of the practice of medicine.

The organization of a proper fifth year should not be left to the control of State boards and hospital authorities. Under such a system the hospital interne never has received and will not receive an experience proportionate to the amount of time expended in a year's service. It is not possible at present for a State board to have any but a

perfunctory control over the managers of privately endowed hospitals and there do not exist at the present time a sufficient number of State and municipal hospitals to care for the annual additions to the number of medical graduates. The present system of a graded interne service controlled by a rotating visiting service has resulted in a tradition that the interne house officer is the head of his wards and has prevented the development of a system of continuous influence because controlled by the rotating visiting physicians and surgeons. The limit in time of service both for the interne and for the attending staffs has failed to build up any permanent organization. It is a notorious fact that during the first of the usual two-year service as a hospital interne the recent graduate gives to the institution much more than he receives except in the very best organized hospitals. During this year under the present arrangement the interne does a maximum amount of drudgery in the laboratory in return for a minimum amount of instruction and experience. He accomplishes really no advanced work in the diagnostic and therapeutic study of disease. This part of his hospital course is secured by him as an interne only during the last half of an 18 or 24 months' service. The exceptional hospitals to which this criticism does not apply are those institutions which are connected either directly or indirectly with medical colleges and in whose wards active clinical teaching is carried on.

It is not possible that any State classification of hospitals based upon the number of beds, laboratory facilities, library plant, and similar criteria, will ever be able to hold the management of an institution in the first rank of educational progress unless there is instilled through the whole institution that spirit of scientific thought and study which can come only from a daily accountability to a group of eager students. It follows, therefore, that the hospitals which are most completely under university control will offer the best service for medical and surgical internes and it is an equally logical conclusion that if the training and work of the hospital interne himself is to be used as a means of education that work from beginning to end must be also under university control.

The educational advantages which will follow from the addition of a properly organized fifth year will consist in an opportunity to remove from the first two years of the medical course all clinical work and to permit the student during those two years to devote himself to a laboratory training and theoretical study of the fundamental sciences which underlie medicine. In this way only can the student secure a sufficient time to learn the necessary parts of those fundamental sciences which have so enormously increased during the past 10 years.

A second advantage to be secured is the opportunity for extending the time to be devoted to training in medical specialties. Even in a five-year course, however, no attempt should be made to do more than give the graduate in medicine a knowledge of the principal pathological conditions which occur in the organs of special sense and in the special functions which are grouped under the heading of medical specialties. He should be trained to recognize the normal condition of those special organs and systems and to recognize variations from the condition of health. In no sense should the attempt be made to make the recent graduate of medicine a thoroughly trained man in any single one of the specialties of medicine. The time to be devoted to the student's training in special clinical subjects should be limited to a necessary proportion of the third and fourth years of the curriculum.

The third advantage to be secured will be the devotion of parts of his second and third year to mastering all the methods of diagnosis which are applicable to the study of the problems of surgery and internal medicine in order that finally in his fifth year he may devote under proper instruction and oversight, his whole time to clinical work in the hospital wards devoted to these two great branches of medicine, which must in the last analysis prove the life work of the vast majority of medical men.

In developing this fifth year it is important that time should be saved the student throughout the whole course for leisure in which to devote himself to collateral reading

upon the special clinical cases and the scientific facts which come within his daily observation. In order to carry out such an organization it is necessary to reorganize the great majority of American hospitals. The old time rotating service for the attending staff which has begun to disappear, must be abolished entirely. If the hospital is large enough it is better to place two men in continuous charge of half as many beds than to allow those same two men to alternate on twice the number for periods of service of six months each. The single-headed continuous service is absolutely essential in any hospital where a consistent system of education is to be developed. The second change consists in abolishing the old American ideal of a rotating house staff service in either three or four grades each of four to six months' duration during a period of from 16 to 24 months. In place of this there must be established a resident interne staff, who shall hold their positions at the pleasure of their superior medical officers for indeterminate periods. Between the head of such a service and his resident staff officers there should be appointed a sufficient number of associates and assistants, who should also be on continuous service except for absences due to necessary vacations.

Finally there should be added to the resident staff a number of fifth-year medical students as clinical clerks. The work of these clinical clerks should be carefully supervised by the resident staff and assistant attending physicians and should form an integral part of the hospital routine. The clinical clerks should not be an extra burden to the service, but their work should count as a necessary part of the routine work. If possible, these student clerks should reside in the hospital and, of course, should be subject to all the rules of hospital discipline. The term of service for such student internes can not be organized on the usual college year of eight months duration and four months vacation. But, on the contrary, the term must be a full year of 12 months without vacation. During such a fifth year the individual student should have his service so divided that he would spend one-third of it on internal medicine, one-third of it on general surgery, and one-third might be divided in similar ward work on such medical specialties as diseases of children and neurology, and on the surgical specialties of gynecology and urology.

The organization of hospitals which might be utilized for this sort of educational work is of two kinds. Either they are directly owned and controlled by the universities themselves, which at the present time is unusual, or if they are classified as extramural hospitals the control of the personnel of the attending and resident staff and the control of the wards for teaching purposes should lie absolutely within the power of the university. One of the great problems which is being solved in several ways by the universities of the United States is the bringing under the control of these educational bodies the many well-organized and well-endowed private hospitals of the country. A beginning has been made in many places, but the relation of some of the best medical schools of the country to the hospitals in which they now enjoy their teaching facilities in clinical branches still leaves something to be desired so far as permanency and completeness of organization are concerned.

Probably in no such case has the perfect plan been formulated as yet. The ideal arrangement that the university shall own and operate its own hospitals demands too great an endowment to warrant any attempt for a general adoption. New funds are needed by every university to-day to improve both the educational and the research features of the scientific as well as the clinical departments of its school of medicine. And it would seem too great a task to add to the search for these funds at the same time an endeavor to secure a plant and sufficient endowment to provide hospital facilities while in every university town there already exists one or more hospitals which are well supported and in which medical education has been neglected by precept and tradition for many years. That the universities need these unused educational opportunities belonging to their neighbor, the hospitals, is perhaps self-evident. It ought to be equally appreciated that the hospitals need in their services

the scientifically trained teachers of the university to serve them as physicians and surgeons. This fact is evident to all concerned in the management of those hospitals which have made proper alliances with university schools of medicine, to the trustees, to the lay officials and the trained nurses, to the general public, and last, and really the most enthusiastic of all, to the patients in the wards. The question to be decided in each locality is, Can the local hospitals which are already in existence be utilized in medical education to the same advantage as would result from the building and ownership of a hospital by the university? The answer is yes, provided that the control of the medical appointments and the organization of medical education in the hospital rest absolutely in the universities.

Two problems are presented to any university which wishes to form an alliance with an existing hospital; first to educate the hospital trustees that medical education will benefit the hospital and that the patients will be better cared for by university control of the wards than by any other system; that the hospital, in other words, needs for its best development the service of university professors, of the many assistant teachers, of the medical students, and also needs for its patients the access to the college laboratories. When this has been accomplished the second problem will be met in the need for formulating a contract of alliance between the two corporations—university and hospital. This has never been done twice in exactly the same way, and in this paper an attempt has been made to indicate the objectives for which both institutions should work. It is fully believed that there exists no antagonism in the aims of both, but that the real interests of both are identical. When such an organization as is here outlined has been accomplished the course in medicine given in American universities will be second to none in point of completeness and thoroughness of execution as compared with that of any country. The excellent work in the teaching of the laboratory branches which has already been developed to so high a plane will then be equaled by the clinical teaching in the practical hospital branches and American medicine shall have been placed on a higher plane than ever before.

The CHAIRMAN. The next paper treats of the teaching of tropical medicine, and is by Dr. Rafael González-Rincones, of Venezuela.

CONVENIENCIA DE CREAR LA ESCUELA AMERICANA DE PATOLOGIA TROPICAL EN UNA DE LAS NACIONES DEL SUR—ESTUDIO DE LA MEDICINA TROPICAL EN EUROPA ANTES DE LA GUERRA.—ESTUDIO DE LA MEDICINA TROPICAL EN AMÉRICA.—LA ESCUELA AMERICANA DE MEDICINA TROPICAL.—SU OBJETO, IMPORTANCIA Y OPORTUNIDAD.

Por RAFAEL GONZÁLEZ-RINCONES,

Profesor de la Facultad de Medicina de Caracas, Venezuela.

Mi compatriota, el Sr. Key Ayala, ha tratado el tema del intercambio de profesores y alumnos con Venezuela de una manera general en la Sección IV.

Por lo que respecta a la medicina tropical, el intercambio de profesores y alumnos tendría que circunscribirse, naturalmente, a las Repúblicas donde hubiere enfermos repatriados en número suficiente, o una colección variada de casos autóctonos. El establecimiento de la enseñanza de la medicina tropical en cualquiera de los países de América tropezaría con menos dificultades de orden nosocomial que las que han entorpecido a veces el desarrollo de las escuelas de Burdeos, Londres, Liverpool, Hamburgo y París, que sólo cuentan para las demostraciones prácticas y la enseñanza clínica con

los hombres que regresan enfermos de las colonias y con el material que reciben de los corresponsales encargados de expediciones científicas especiales.

Hoy, más que nunca, dado el incremento del comercio, se hace sentir la necesidad de la instrucción técnica en enfermedades del Trópico para las nuevas generaciones médicas y veterinarias; instrucción que las anteriores iban a buscar a Europa, como podrá verlo quien hojee los boletines de las sociedades de medicina tropical ya enumeradas; por fuerza de las actuales circunstancias, las facilidades de aprender en dichos centros se han restringido considerablemente, pues todos se hallan en países beligerantes. Para el progreso de nuestra medicina tropical no se puede tampoco contar con la influencia benéfica de expediciones, como las de Marchoux y Salimbeni, Blanchard y Brumpt, Harald Siedelin o Andrew Balfour, por ahora. El proyecto que estuvo por realizarse en 1914, del establecimiento de los laboratorios flotantes 'Wellcome,' análogos a los del Nilo, en los ríos de América tropical, ha sido aplazado indefinidamente en vista del actual conflicto.

Sólo podemos contar con nuestros propios medios y es preciso, urgente y patriótico atender a la necesidad señalada, agrupando los recursos de todos, para provecho de todos. Por mi parte, me siento feliz al poder hacer estas apreciaciones ante un Congreso como éste, cuyos distinguidos miembros, a no dudarlo, llevarán la idea de la cooperación panamericana para el estudio de la medicina tropical, a sus respectivos países, con el fin de ver cómo se podría llegar a un resultado práctico en este sentido.

Hace ya algún tiempo que he venido ocupándome del asunto, el cual me parece trascendental. En 1910, el Profesor Landouzy, decano de la Facultad de París, y con motivo del banquete anual del Instituto de Medicina Colonial, en un discurso, el cual tuve el honor de responder, en nombre de mis compañeros de promoción, latinoamericanos, que eran muy numerosos, sintetizó magistralmente la influencia que habían tenido en la colonización de los países cálidos los modernos descubrimientos de la medicina tropical. Pero aunque hay muchas enfermedades comunes a todos los países tropicales, no es lo mismo la patología del África que la de la India, Indo-China, América intertropical o del Norte de Australia, por ejemplo; como además, hay muchos problemas americanos que sólo se pueden resolver in situ, propuse en un periódico de Caracas, después de comentar las ideas emitidas por el Profesor Landouzy, que se fundara una escuela de medicina tropical en uno de los países de Centro o Sud-América para completar la educación técnica de los médicos que ejercen en la zona cálida, quienes son, en síntesis, los encargados de preceder, acompañar y seguir las corrientes inmigratorias, las empresas explotadoras y las expediciones militares en los dominios que "el Sol enamorado circunscribe," que cantó Andrés Bello.

La oportunidad tan propicia que se me presenta de abogar nuevamente por esta idea, ante los honorables delegados de este gran Congreso; la anormal situación en que se halla la medicina tropical en virtud de la guerra europea y la cordial manifestación de confraternidad americana a que tengo el inolvidable honor de asistir, me animan a opinar que en caso de que tocara a Caracas la envidiable elección de ser el asiento de la Escuela Americana de Medicina Tropical, el Gobierno de mi país, que está haciendo un vigoroso esfuerzo para el adelanto de la instrucción médica, secundaria, en la medida de sus recursos, la realización del proyecto. Tanto el Presidente, como el Ministro de Instrucción Pública se interesan mucho por las cuestiones de medicina y veterinaria, que tienen tan grande importancia para el desarrollo económico de la Nación. (El autor quisiera que se elija Caracas como asiento de la nueva Escuela Americana de Medicina Tropical.)

Caracas es una ciudad de clima agradable, posee un hospital moderno, donde llegan los enfermos de toda Venezuela y de los países vecinos; se acaba de construir allí un edificio especial para la antigua facultad de medicina que se hallaba enclaustrada en la Universidad Real y Pontificia de Santiago de León, con laboratorios y anfiteatros, adyacente al Hospital Vargas. Hay además la ventaja de que a su alrededor queda suficiente terreno para las ampliaciones que se vayan necesitando. Por mi parte

estoy seguro de que todos mis colegas acogerían con el mayor placer a los maestros que fueran a enseñar y a aprender, brindándoles toda clase de facilidades, si se lograra que los Gobiernos de las Américas secundaran, con los recursos indispensables, el establecimiento de la "Escuela Americana de Patología Tropical."

Muchos problemas importantes serían resueltos por los trabajadores que así se agruparían. En apoyo de este aserto, me permito recomendar la lectura del artículo de Andrew Balfour, C. M. G., M. D., titulado "Tropical Problems in the New World," publicado en Transactions of the Society of Tropical Medicine, de Londres, enero de 1915, el cual me permito dejar en la biblioteca, a la disposición de mis honorables colegas.

The CHAIRMAN. Dr. Gonzalez-Rincones's timely paper on a subject which interests us in America highly, "A study of tropical diseases," is open for discussion.

Mr. BARNES. I am very much pleased to note that we are rising to the understanding that zoology is of some importance to the medical man. I have heard bacteriology, but not zoology. You will remember that several mornings ago I called attention to the fact that I believed that zoology had already displaced bacteriology; and in the study of tropical medicine, which is largely a zoological problem, knowledge of zoology is of material assistance. I find that what are known as tropical diseases are in a very great measure distributed all over the globe. I would like to see zoology get its due portion of credit from the medical fraternity; and I think there is no question but that, as time goes along, it will demand its own position in this field of tropical medicine. I am very greatly pleased that our friends to the South are doing such splendid work and are realizing the great importance of zoology.

The CHAIRMAN. I might say, in reply to Dr. Barnes's remarks, that we might perhaps be advocating a school of applied zoology, in one sense, for the treatment of diseases which are largely tropical. Clinically, we see cases which are more largely tropical, but they are apparently rare in the United States. In our own school we have a course in tropical medicine given by an instructor in tropical diseases in the Naval Medical School. Such a course has to be largely medical, and clinical cases are very few.

Adjournment.

SESSION OF SUBSECTION 10 OF SECTION IV.

PAN AMERICAN UNION,
Tuesday morning, January 4, 1916.

Chairman, **FREDERICK C. HICKS.**

The following program was presented:

Special Schools of Commercial Education of College and University Grade:

The Georgia School of Technology, by President K. G. Matheson.
Tulane University, by Dean Morton A. Aldrich.

University of Cincinnati: Continuation and Evening Courses, by
Dean Frederick C. Hicks.

University of Oregon: Problems of the Detached School, by Director Harry B. Miller.

New York University: Two-Year Course and Individualization of Training for Business, by Jeremiah W. Jenks.

The Graduate School of Business: Amos Tuck School of Administration and Finance, Dartmouth College, by Dean H. S. Person.

Harvard Graduate School of Business Administration, by Dean Edwin F. Gay.

THE GEORGIA SCHOOL OF TECHNOLOGY.

By **K. G. MATHESON,**

President Georgia School of Technology.

I have been impressed with the fact that relatively little importance, or emphasis at least, has been laid upon the question of engineering education as a means of communication between the Pan American countries. I have heard some very able engineering papers read, and have enjoyed them, but as a direct means of bringing together the countries more closely, I have not heard that point emphasized, and it seems to me to be a matter of some importance.

Permit me to call attention to my own southern country, the "South," as it is ordinarily called, which is very rich in natural resources, but is somewhat retarded in development due to lack of engineering education. Since we have been introducing this kind of education in every State in the South it has given rise to great advancement and development along all lines of efficiency. I may say that the Georgia Institute of Technology is a State-supported college. Our attention has been called to the desirability of closer relationship between the South and South American and Central American countries. We have a number of students from Central and South America, and from Mexico and Cuba, and we have found that the graduates who go out from our institutions are in demand in some of these countries.

For instance, we have several graduates now in Argentina and one or two in Brazil, and one or two located in various other parts of South and Central America. These young men have done remarkably well, and have been the means of communication between these countries and our own. Now, may I be permitted to say that with the vast natural resources of South and Central America, if these are properly and efficiently developed, the results will be all that imagination can conceive? We are beginning to demonstrate something of that in our own country. Take New England, which is not anything like so rich in natural resources as is the South, and yet, through civilization and a very high form of education and efficiency, it has gone ahead of us along certain lines.

The same principles in an engineering education for South Americans would of course bring wonderful results. In brief, our plan is this, that in centers of the United States, where there are efficient engineering schools, let us offer scholarships to South American students to come and study engineering in these institutions. Of course the idea is suggested in part by the Cecil Rhodes scholarship at Oxford, where representatives of the peoples of the Anglo-Saxon world are brought in close contact. I have a brother-in-law who was one of the Rhodes scholars at Oxford, and I have learned a great deal on the subject by personal investigation. There has been a wonderful intermingling of good fellowship as a result of this plan. Our idea is that in such localities as Boston, where the Massachusetts Institute of Technology is located, and in Atlanta, which we believe to be the southern center, that we should offer to the students of South America the opportunities of our technical schools by competitive examination and appointment. Your presidents of schools could correspond with our commissioner of education. The details have to be worked out, but the idea would be to induce your bright young men to come to our engineering institutions and learn there what we have to give, and then go back to Central and South America and illustrate what they have learned as a means of developing their country. They would have the advantage of the great commercial development near our own institutions, the great power laboratories, and other practical opportunities. Let me give you a practical example of this fact:

We went to the president of one of our large corporations and told him, as a business proposition, that we wished to place some boilers in the power plant of our institution. He asked us how many students we had. He knew something of the work of the institution. Cooperating with me personally was one of our trustees, who had graduated 30 years ago from the Boston Tech. He remarked to the president of the corporation: "Thirty years ago I saw four of your boilers installed, and since that time as the representative of one of the largest corporations in the South I have bought several million dollars worth of boilers, and have only bought yours." The president then said to me, "You can have any number of boilers you wish." Can not you see the commercial value that these young men coming from the South American countries will have in coming in contact with these advantages in the United States in the way of equipment which they must have? The immediate commercial possibilities are easily foreseen.

I believe some practical plan relating to the proposed scholarships can be gradually worked out. We are not in a position to make definite offers at present, but we can place ourselves in communication with each other if we receive encouragement of this idea. In closing let me call your attention to a type of engineering which has been wonderfully successful in the University of Cincinnati, a municipal institution, under the leadership of Dean Schneider, who has organized and developed there what he calls cooperative engineering. The whole idea is that young students, instead of going into the school shops to secure practical training, secure it in the manufacturing plants of the city. Two students form a unit; one young man works two weeks in the college while his partner is working in the shops. At the end of two weeks that is reversed, so that each of the two men has a personal experi-

ence in the shops. The course of training requires five years instead of four to secure the degree of a bachelor. Of course that type of education is possible only in large manufacturing centers. We have put it into modified use at the Georgia Institute of Technology in Atlanta, and it promises remarkably well. In Cincinnati before it had been in operation five years they had at least 3,000 applications from high-school graduates to be allowed the course with only a capacity of 500 students. It is not the son of the poor man only but the son of the millionaire as well and the man of means who applied. You see the sons of millionaires working side by side with the poor boys in the shop, learning the business from the ground up, getting a practical experience and at the same time securing an academic training. Now we have all of these things to offer if we receive the proper encouragement. We will use every means possible to secure these scholarships for the young men from South and Central America, perhaps offering them at least their fees. We ask the same cooperation from them. Perhaps their traveling expenses might be paid by their Governments. I can speak for only one institution, the Georgia School of Technology. I shall be very glad to do what we can along these lines. We must begin in an elementary way as not very many can be accommodated at first, but the idea can be extended to bring about this interchange which will be valuable to all concerned. I appreciate very much, Mr. Chairman, ladies and gentlemen, your courtesy in allowing me to interrupt your program, yet I felt the subject was of sufficient importance to bring before this conference, and I shall be very glad to consult with anyone concerning it by letter.

COOPERATION BETWEEN THE BUSINESS MEN OF NEW ORLEANS AND THE COLLEGE OF COMMERCE AND BUSINESS ADMINISTRATION OF TULANE UNIVERSITY OF LOUISIANA.

By MORTON A. ALDRICH,

Dean of the College of Commerce and Business Administration of Tulane University.

I shall speak of only one phase, but perhaps the most suggestive phase, of the growth of the college of commerce and business administration of Tulane University.

Everyone who has helped in the work of building a college of commerce knows the necessity of gaining for the college the interest and confidence of business men. It is because of the fundamental importance of this understanding spirit on the part of the business community that I am to talk to you this morning about the cooperation which has developed in New Orleans between the business men and the college of commerce and business administration of Tulane University, and especially about this cooperation on the part of the business men.

The business men of New Orleans realize the responsibility of their position at the gateway. Quietly and efficiently they are preparing to serve the growing commerce of the Mississippi Valley, and one of the responsibilities which they feel is the necessity of providing adequate training for the young men who are preparing for a business career.

When a few representative New Orleans business men made up their minds that their city should have a college of commerce, they found three groups of people to which they could turn for help. First, there was the city's organization of business men, the Association of Commerce; secondly, there was Tulane University; and, thirdly, there were those individual business men who were especially interested in the establishment of mature business education.

Their problem was to mobilize and combine these forces. There was nothing unusual or peculiar to New Orleans, you see, either in the problem or the situation.

From the outset it has been clearly understood that the college of commerce and business administration is one of the professional schools of Tulane University, and that the university has complete and undivided control of its appointments, of its policy and standards, and of its educational bill of fare.

But it was the ideal of those who took the lead in this movement that a truly substantial and adequate foundation for a college of commerce must include the active interest and support, not only of the university, but of every one of these three groups, and moreover that this support must be so organized that in each case the interest would be permanent.

Especially was it desirable that the individual business men who contributed money to the college should be organized in some way so that they would not feel that their responsibility ceased with the signing of a check. And let me make it very clear that when I speak of cooperation I do not mean money raising. In all this cooperation which I am describing it is not merely the money that we were seeking, but solid, active, day-by-day interest, and helpful suggestions and support.

The business men of Germany have come to think of their colleges of commerce as an essential part of their commercial development. And in an American city a college of commerce can accomplish only a very little of what it might otherwise do to help, unless the business men come to think of it, as they think of their exchanges and their railroads and their banks, as a natural and essential part of the city's business equipment and business life.

Consequently it was a necessary part of our ideal that the business men of New Orleans should come to think of the college as theirs and for them—as their asset and their responsibility.

We set out, therefore, to hook up with the college the interest of the business community, first, so that it would grow into a real and permanent instead of a perfunctory or temporary interest, and, second, so as to insure a plan of action that would eliminate waste motion and formalism and make every stroke tell.

The result is that our college of commerce is to-day in the happy situation of having three parents solicitous for its welfare instead of one. Tulane University watches over it because it is one of its professional schools. The citizens and business men who are contributing to its support think of it as theirs and feel responsible for its maintenance and growth, and the Association of Commerce looks upon it as one of its departments and considers it as an important part of its work. And all this cooperation has been worked out with very little needless formality or red tape.

Probably the clearest, as well as the shortest, way for me to present some of the advantages which follow this mobilization and consolidation of effort is to picture to you rather concretely some of the results which we are obtaining in New Orleans. I realize fully, however, that your interest is not primarily in New Orleans, but in the advantages which arise out of joint action between the business men of a community and its college of commerce, and I am using our local experience merely as an illustration.

What you chiefly want to know, I take it, is how this cooperation between the business men and the college of commerce works?

What does the association of commerce do? On the material side it provides ample quarters in its own building for the night courses which the college offers for business men and women (in addition to its four-year day course in the college buildings) and for the public informal Friday night talks of the college of which I shall speak in a moment. Furthermore it advertises the college of commerce much as it advertises any other department of its work.

Another valuable result of the close connection between the college and the Association of Commerce is that more of the older members of the association and more of the members of its vigorous young men's department enroll in the business men's night courses of the college. There is no doubt, I think, that young men are more likely to

attend the courses of a college of commerce which is associated in their minds with the commercial organization of the older business men.

And most valuable of all, this intimate relationship helps to lend to the work of the college a business atmosphere of the right sort, which is highly stimulating to young men.

The public weekly informal Friday night talks of the college of commerce are plain business talks by business men, on business subjects. They are short; they are informal; they are always followed by questioning and discussion; and they are largely attended by business men.

One welcome result of these informal Friday night talks is that they bring the college to the attention of a large number of business men whom it would be difficult to reach in any other way.

These talks are held under the joint auspices of the college and the association of commerce, with the result that we are developing in New Orleans—instead of occasional business talks at irregular intervals and at unexpected places—one strong business forum, to the success of which the association of commerce and its young men's branch, the college of commerce, and the business community generally, unitedly contribute.

So much as to the cooperation of the association of commerce. Before I turn to speak of the cooperation of the individual citizens and business men, let me digress for a moment to say that for a good many years we have had in New Orleans a business men's discussion club, the Tulane Society of Economics. The monthly meetings of this society are planned to be attractive to the type of business man who does not like to attend a lecture and who declines to take part in a public discussion. They are family gatherings.

The result is a society less pretentious than if it held public meetings and published its proceedings, but in some ways perhaps more effective, because a number of our leading business men attend, and because the discussions are candid and free.

This society has been an important influence in promoting the spirit of understanding which has made joint action effective.

Now as to the cooperation of the individual citizens and business men. At the outset, one hundred and four of them combined to guarantee the expenses of the college. But the college needed from these business men their personal service as well as their money, and the danger was, as I have said, that they would feel that their responsibility, the need of their understanding of the work, and their possibilities of helpfulness to the college all ended with their signing of the guarantee.

One of the wisest and most far-reaching steps in the permanent coordination of all the groups interested in providing training preparing for a business career was the action of the board of administrators of Tulane University in requesting the members of this board of guarantors to elect officers and an executive committee, and form a permanent organization, in order to make it possible to confer with them in regard to matters affecting the success of the college.

Not only do the officers and executive committee meet monthly to hear detailed reports of the work of the college and to lay plans for its future growth, but individually they and the other members of this board of guarantors stand ready to contribute their thought and time unselfishly, in all sorts of ways, in our effort to extend the usefulness of the college.

The professors of the college of commerce are in close association with the members of this board of guarantors and turn to them constantly for the results of their practical experience and for assistance and advice, and it is a great advantage to the teacher (and to his students) to be able to consult freely with business men who already are interested in helping the college and understand its work.

To cite one other evidence of their spirit, these business men guarantors soon realized that a main reason why more young men already in business were not attending our

night classes, was because their employers—in many cases—did not show them that they recognized the value of the work. The guarantors understood that if this business training is valuable for the students whom we had, it is equally valuable for ten times as many more. Consequently, they have set to work to talk with these employers, with the result that more and more the heads of our business houses and banks are advising their employees to attend the night classes, and frequently are offering to pay part or all of their tuition fees.

Artemus Ward said once that he believed that he had the power of oratory, but he didn't have it with him. And in any event, a plain talk like this does not lend itself to a peroration.

In my discussion of the relation between business men and their college of commerce, I have reversed the method of the student who wrote in his examination paper that he had forgotten the facts, but thought that he could state the significance of them. I have tried to state the facts so that they would tell their own story and, unless I have altogether failed, their significance and their spirit are already plain.

The cooperation which I have been describing is not formal or superficial, but very genuine and real. It provides for the college of commerce a broad and sound and substantial foundation on which to build. It is a denial of the feeble old idea that education and business won't mix and that a young man had to choose between business and a professional education. And above all, this cooperation has relied for its success on a well-founded belief in the public spirit and foresight of the New Orleans business man.

THE COLLEGE OF COMMERCE OF THE UNIVERSITY OF CINCINNATI.

By FREDERICK C. HICKS,
University of Cincinnati, Ohio.

The working plan of the college of commerce of the University of Cincinnati represents the attempt to realize two main objects: first, to provide facilities for commercial education of a high standard, and second, to make the training fit the actual needs of business.

This fact is mentioned here, not because our college differs in this respect from others of a similar character, but because these fundamental objects supply the key to an understanding of the various features of our organization and methods. In the following description of the college, its several phases are presented in two groups according as they relate primarily to one or the other of these aims.

PRELIMINARY FACTS.

Before, however, entering upon a description of the college itself, two preliminary facts should be mentioned, as they may help to a better understanding of what follows.

The university, of which our college of commerce is a part, is a municipal institution. Though begun as a result of a modest endowment, supplied by a public-spirited citizen, it has from the start formed a part of Cincinnati's educational system and as such derives a portion of its income—and that too the larger portion—from taxes. At the outset, it was not contemplated that the institution would differ materially from the traditional university, but there has gradually developed the necessity of adapting the character and scope of its work to the needs of the city and of its citizens. It is, therefore, becoming a true municipal university, not merely in the sense of one supported and controlled by the city, but also in the sense of one whose work is related directly to the activities of the city.

It should be noted also that this college of commerce is new. Though the results already attained are sufficient to warrant the belief that it is working in the right direction, the outcome of many of its features is still problematical. The college is largely the outgrowth of evening classes started some 14 years ago by the Cincinnati Chapter of the American Institute of Banking. These evening classes were organized into an incorporated college in 1906, but the real beginning of the plan outlined here dates from 1912, when the college became a part of the university.

HIGH STANDARD OF COMMERCIAL EDUCATION.

The first of the two leading aims sought in the organization of this college, viz, to provide a high standard of commercial education, is reflected in (1) its requirements for admission, (2) its requirements for graduation, and (3) its restrictions upon the schedules of students.

REQUIREMENTS FOR ADMISSION.

(1) Briefly stated, the requirements for admission in the case of those contemplating graduation, consist of, first, the regular college entrance requirements, and, second, a two-years' precommercial course in the College of Liberal Arts.

In view of the limit of time for this paper, I must assume that my hearers are familiar with the general character of what have been termed the "regular college entrance requirements." For those not familiar with them, it may be said that they are comprised in a four years' course in a high school or in a college preparatory school. We have not undertaken as yet to adjust this preparatory course with special reference to the future commerce student. However, one-fourth of it, or, to speak technically, four units, may consist of commercial subjects—bookkeeping, stenography and typewriting, commercial geography, and commercial law.

The two years' precommercial course may consist either of two full years of liberal arts work or of a combination of liberal arts work and approved business experience, such business experience being accepted for one-third of the precommercial course.

In case the student elects to seek admission by the second of these alternatives, he may prosecute the two sorts of work together, as the liberal arts college offers, in addition to the regular day work, late afternoon and evening classes so adjusted as to enable the student to combine class work and practical business training. Most of the students now preparing to enter the college are following this second plan and, although we are not yet ready to speak finally on the subject, we are inclined to the belief that this combination of study and business is preferable. Students who come into the college of commerce with business experience seem to have a better appreciation of the subjects studied in the college.

Whichever of the two plans the student elects to pursue, the subjects studied are in the main prescribed. They include economics, economic history, commercial geography, English composition, mathematics, statistics, business psychology, ethics, money and banking, and railroads. For certain of these studies, subject to the approval of the faculty, work in German, French, or Spanish may be substituted in case the student is contemplating a career to which any of these languages is essential. Other subjects might with profit be added, if time permitted, but at present two years of precommercial work are all that seem advisable, so it is necessary to limit the subjects required to such as are most important.

As a rule, it is expected that the precommercial studies will be completed before the student enters the college of commerce. But it sometimes happens that he needs immediately some of the training offered by the college. In such cases permission is given to pursue precommercial and college of commerce work at the same time.

Though this is the standard of admission established for those who contemplate taking a complete course in the college of commerce, it should not be inferred that only those who have so prepared themselves are admitted to its classes. The college is not primarily a degree-giving institution. It exists for the purpose of increasing

the efficiency of those who contemplate engaging in business or who have already entered upon such a career. To this end, its facilities are available to every one whose training, either in school or in actual business, is such as to enable him to utilize them with profit. Accordingly, provision is made for admitting special students. They must be at least 20 years of age and must satisfy the college authorities that they are able to carry on the work desired. At present, by far the larger number of our students belong to this class.

REQUIREMENTS FOR GRADUATION.

(2) Coming now to the requirements for graduation, the regular course in the college of commerce covers a period of three years and leads to the degree of bachelor of commerce.¹ The work here consists of two parts carried on simultaneously: the first composed of studies in the college; the second, of practice in business.

The studies of the first year are prescribed; those of the second year are partly prescribed and partly elective; while those of the third year are wholly elective.

In the first year's work is included a group of subjects, selected because of their importance in all fields of commercial activity. This group consists of marketing, the elements of business administration, the fundamental principles of accounting, the elements of finance, and the legal relation of buyer and seller.

The prescribed work of the second year consists of three additional studies regarded as fundamental to all business, viz, the legal relation of debtor and creditor, insurance, and barometrics of business.

In addition to these, the student selects, with the approval of the faculty, two other studies. He begins here, if he so desires, to prepare for the special field which he contemplates entering.

The subjects of the third year, as stated above, are wholly elective, so that intensive work may be done in a special field, though in some instances the needs of the student may best be met, even at this stage, by a diversity of subjects.

The class work mentioned constitutes two-thirds of the work required for graduation. The other third consists of business experience and the study of the business in which the student is engaged. Though this part of our plan has not yet been fully developed, considerable progress has been made. When matured, the study of business theory will be accompanied throughout the three years by the study of business practice. It should be added that failure to meet successfully the practical demands of business debars the student from continuing as a candidate for a degree.

In addition to the above, the requirements for graduation include the preparation of a satisfactory thesis relating to the business in which the student has been engaged, with special reference to the application thereto of the subjects studied in the college. The paper must show that the writer has the ability not only to gather data, but also to correlate and apply the same in solving commercial problems.

SCHEDULES OF STUDENTS.

(3) The third of the features mentioned as serving to promote a high standard of training is the provision concerning the student's schedule of class work.

As has been said, the work of the college is organized with a view to combining theory and practice. More extended comment on this feature will be made later. It is referred to here, because it gives rise to a serious problem in connection with the quality of the work done.

A full year's work in the college can scarcely consist of fewer than 10 hours of class sessions a week, or five two-hour periods. Less than this would involve either an

¹ The colleges of liberal arts and of commerce have established a course which enables students to obtain the degree of bachelor of science upon the completion of four years work. Two of these years are spent in the college of liberal arts and two in the college of commerce. Similar arrangements have been made in some of the other colleges of the University.

undue abridgement of the curriculum or an unreasonable extension of the time necessary to complete the course. If these sessions are so arranged as to require attendance upon classes five evenings in the week, the student, whose days are filled with the duties incident to business activities, is unable to maintain the standard which is expected of him. Adequate preparation for classes is indispensable, if a high grade of work is to be attained. Nor will it suffice to have this preparation made during the journeying of the student to and from business and classes or during the odd moments that can be snatched from the lunch hour. His program must include definite periods when he can give concentrated and uninterrupted attention to study. Otherwise his attainments will be fragmentary and superficial or he will be limited largely in his college work to such benefits as may be derived from the class sessions themselves.

To meet this situation, our college provides classes in the late afternoon as well as in the evening, and no student is allowed to include in his schedule more than three evening sessions, each of two hours' duration. The remainder of his work must consist of classes which are held in the late afternoon. To strengthen still further the quality of the student's work, we hope ultimately to be able to require stated periods for supervised study.

ADAPTATION OF TRAINING TO NEEDS OF BUSINESS.

The second of the fundamental objects sought in the organization of our college of commerce is to make the training offered fit the actual needs of business. This has determined (1) the organization of the work into a distinct college, (2) the composition of the faculty, (3) the time of holding class sessions, and (4) the character of the subject matter taught.

ORGANIZATION OF A SEPARATE COLLEGE. •

(1) When the University of Cincinnati decided to add facilities for higher commercial education, the first point raised was whether this work should be included in the college of liberal arts or should be organized as a distinct college. The second of these alternatives was chosen.

The main reason for this decision was the conviction that this policy will better enable the university to adapt the work to meet the practical demands upon it. It is believed that the basic ideas of professional colleges and of colleges of arts and science are different. The former seek to provide for specific fields of action, while the latter are more concerned with general intellectual development and culture. The success of each is apt to be imperiled by a combination of the two.

This conclusion is largely the result of long experience with liberal arts students who have been allowed to include some professional work in fulfillment of the requirements for a bachelor of arts degree. The outcome of this is often such a division of interest as to make the results in both fields unsatisfactory, or the student's interest in one of the fields so far overshadows the other as to make the results obtained in the second of but nominal value.

A further consideration which gives special importance to the separation of arts and professional studies in the case of commercial education is the need in the latter of large freedom for experimentation. To those familiar with the status of higher commercial education it is unnecessary to dwell upon the fact that the subject matter which must constitute the content of that training is as yet in the experimental stage. Not that it ever will reach a condition of finality, but, as yet, only a beginning has been made in collecting the data required for university instruction in commerce and in adapting it to the needs of students who are seeking to prepare for a business career. Herein lies one of the most serious problems that confront the organizer of a college of commerce.

In this stage of our work satisfactory results can be obtained, we believe, only when the commercial work is in the hands of a distinct body of teachers with freedom to mold it as enlarging experience may suggest. And such freedom is difficult of attain-

ment when those in charge are hampered by the traditions of a long-established and quite different field of education and often too by a lack of sympathy on the part of those in the colleges of liberal arts who look with suspicion upon this new claimant for recognition in the domain of higher education.

Still another reason for establishing a distinct college is the greater ease with which, under such a plan, a professional spirit can be developed among the students themselves. The value of such a spirit is self-evident. Its attainment can be more readily secured when the work is so organized as to give the student body community of interests and aims.

It should be mentioned also in this connection that not only has the work in commerce in the University of Cincinnati been organized into a distinct college, but this college has been limited in its scope strictly to commercial subjects and to those, such as finance and commercial law, which are immediately related to commerce. Pressure is sometimes brought to include here training for other fields—for journalism, for social service, and for public service. Believing, however, that the most efficient development of higher commercial education requires oneness of aim and the concentration of resources, we are seeking to maintain in fact that which is suggested by our title, a college of commerce.

COMPOSITION OF THE FACULTY.

(2) A second feature of the college that results from the desire to bring it into close touch with business is the composition of the faculty. The teaching force consists of three groups: (1) The faculty staff, (2) staff lecturers, and (3) special lecturers. Most of those constituting the second and third of these groups are business men.

Of the first class there is one for each of the four departments—administration and accountancy, marketing, finance, and commercial law. These with the president and dean constitute the voting faculty, which determines the policy of the college. They combine in their activities the immediate charge of the fundamental courses in their respective departments and general supervision of the work given by staff lecturers and special lecturers.

The second group of teachers mentioned, staff lecturers, consists of men who have charge of special classes, or are regularly engaged for part of the work of classes. Most of them, as was stated above, are men engaged in business. Among those now employed as staff lecturers are the vice president of one of our national banks, who gives a course in banking; the assistant secretary of one of our trust companies, who conducts a class in investments; the assistant manager of the Cincinnati branch of a leading advertising company, who gives an advanced course in advertising; two practicing accountants, who assist in the classes in advanced accounting and auditing; the traffic manager of one of our leading paper companies and the manager of the traffic department of the Cincinnati Chamber of Commerce, who conduct classes in traffic management.

The third group, special lecturers, consists of men of affairs engaged from time to time to discuss special phases of their business. For example, when, in the course in credits, mercantile agencies are under consideration, the subject is presented by a representative of Bradstreet or of Dun. Other special lecturers discuss such topics as "credit from the standpoint of the retail credit man," "handling an insolvent estate," "the work of the actuary," and "the purchasing methods of a grocery and baking company."

To utilize effectively the services of men of affairs as special lecturers in class work requires both care in the selection of men and supervision of the subject matter to be presented by them, to the end that it may be given in the proper form and fit the course of which it is a part. It may not be out of place to mention also the fact that we do not accept the services of any one in connection with regular instruction

without paying for it. This is true even in the case of the special lecturers. Though the compensation is relatively small, our experience has been that it serves to give a business tone to the arrangement which greatly increases its usefulness.

TIME OF HOLDING CLASS SESSIONS.

(3) The effort to adapt the facilities offered to the needs of business is reflected also in the arrangements made for holding classes. This is part of the plan devised for the purpose of establishing a close relation between the college and the business community. Such a relation is, of course, indispensable to the fulfillment of the functions of any college of commerce, but special conditions render it of exceptional importance here, for, as has been said, it is an essential feature of our plan that the students of the college shall be actively engaged in business while pursuing their studies.

To comprehend the principles underlying any vocation, one needs to be in actual contact with those who are daily trying them out. Only in this way can he grasp their significance and appreciate their bearing upon the conduct of affairs.

Moreover, under the long-established policy of preparing for professional life by first acquiring the theory and after that the experience, it not infrequently happens that one who proves to be highly qualified to master the theory finds himself poorly adapted to its application. Had he found this out earlier, he could perhaps have changed to some field better suited to his qualifications. But as it is, he learns of his limitations too late and is forced to limp through life a misfit. The plan here followed should materially lessen such failures.

The method we are now employing to secure this combination of theory and practice is to place the class work of the college in the late afternoon and evening, from 5 to 7 and 7.30 to 9.30, so that students may spend the major part of each day in their several business positions. But if students who are in business are to attend classes at the hours mentioned, employers must be willing to allow them to leave work not later than 4.30 p. m. on the days when late afternoon class attendance is necessary.

A systematic attempt to enlist the support of employers in this part of our work was begun about a year ago. The results thus far have been most encouraging. While the number at present actively cooperating is not large compared with what may be expected as the college grows in the confidence of the business men, sufficient has been accomplished to insure the success of the plan and to warrant the belief that in the near future our college will be looked upon as an essential feature of the business life of the community.

SUBJECT MATTER TAUGHT.

(4) The fourth feature of our policy through which we are undertaking to adapt the training offered to the needs of business has to do with the subject matter taught. Reference has already been made to the difficulty of the problem here presented and to the undeveloped status of the results thus far obtained.

It is sometimes thought that the curriculum of a college of commerce should include studies treating of all the important phases of business. Such is not necessarily the case. However vital an activity may be to business success, it can not be taught until there is something to teach, that is, until the experience in that field has become sufficiently standardized and formulated to supply the requisite subject matter. Take salesmanship, for example. A satisfactory answer has not yet been given to the question to what extent successful salesmanship is an individual matter and to what extent it possesses features common to all or to most efficient salesmen. With all due respect to the efforts being made to present this subject in our educational institutions, it is not too much to say that, as yet, the results are decidedly elementary. They have not reached the development which they must attain if salesmanship is to have a permanent place in an institution of university rank which professes to fit men for business.

Nor will it suffice to transfer to the college of commerce those studies dealing with commercial subjects which have long been established features of the work in the department of economics, such as money and banking, the tariff, and transportation. As presented in a liberal arts course, these subjects are treated primarily from the social point of view. The end sought is to ascertain the public policy which should be adopted in order to promote the general welfare. Important as they are, they do not serve the purpose of a course of instruction which aims to train for the actual conduct of business. They provide rather the foundation upon which to build the more technical training. The social point of view and the commercial point of view, though they have something in common, differ fundamentally.

In the development of our class work the starting point is business itself. The studies are planned with definite reference to specific vocations, such as the work of the business manager, the salesman, the advertising manager, the credit man, the traffic manager, the general banker, the investment banker, the accountant, etc.

This phase of the work will be better understood by considering a few specific illustrations. Take, for example, the field of finance. In preparation for this the student should study economics and the general subject of money and banking in the liberal arts college, where he becomes familiar with the nature and functions of money, the history and present status of monetary systems, and the general character and history of banking systems.

Coming, then, to the college of commerce, he first analyzes a business unit to discover which of its activities belong to the department of finance. He will find that among the most important of these are the securing of the requisite capital for starting and maintaining the business, its banking relations, its credit relations with those from whom it purchases and to whom it sells, and its methods of temporarily investing funds. Studying here what we have called "the elements of finance," he learns the principles and general practices which apply to all of these activities, after which, if he so desires, he takes up one or another of them for intensive study.

If his choice centers upon banking, he begins with an analysis of a balance sheet of a given bank, as prepared for the Comptroller of the Currency, becoming familiar at the outset with the technical terms employed and with the various activities of the bank. Following this, he takes up the problems that arise in the administration of the bank's affairs, problems of investments, of loans, of domestic and foreign exchange, of the relation of the bank to the Federal reserve system, and others. For example, in studying the subject of loans, actual cases are considered with only such changes as are necessary to avoid revealing the identity of the parties. The statement of the applicant is examined, also his status as a depositor, the character and prospects of the business, and such other data as bear upon the question. The students are then called upon to judge as to whether a loan should be made and if so under what conditions. Again, in the case of investments, a study is made of their nature in a given bank in its relation to the nature of the deposits in the same bank; the extent to which national banks may properly invest in bonds; the kinds of bonds suitable for a secondary reserve in a commercial bank; bond departments in their relation to their respective banks; and similar subjects. Under foreign exchange, consideration is given to such questions as how the various kinds of paper originate; how they are bought, handled, and resold; and how the foreign exchange rates affect the price of foreign bonds. In connection with the Federal reserve act, special emphasis is given to the nature of the relation between Federal reserve banks and member banks, the advantages to be derived therefrom, and the use and development of trade and bank acceptances.

The same general plan is followed in all the subjects taught. The path leads from business to the class room. That theory should be sound but unworkable is regarded as impossible. For sound theory is only the correct interpretation of wise practice.

An essential part of this phase of our plan is the study of the business in which the student is engaged, to which reference was made in an earlier connection. It is to be

carried on under the supervision of the faculty of the college and will involve regular weekly reports and conferences. Specially prepared schedules will guide the student in his investigations. During the first year, attention will be given to the character and organization of the business unit in which the student is employed, and to his relations with it, contractual and other. During the second year the study will cover the character of the industry to which the given business unit belongs, its history, and its place in the general field of commerce, both domestic and foreign. The third year will be devoted to special problems that arise in connection with the business.

It is confidently expected that such work, systematically pursued, not only will give to the student a larger and more thorough appreciation of business activities, but will also develop in him habits of study and investigation which will prove of value throughout his business career.

THE SCHOOL OF COMMERCE OF THE UNIVERSITY OF OREGON.

By HARRY B. MILLER,

Director School of Commerce, University of Oregon, Eugene, Oreg.

This school was organized in September, 1914, with H. B. Miller as director, Mr. Miller being especially fitted to head such a school and organization due to his long and varied business experience and to his work in the consular service of the United States. For five years Mr. Miller was consul general in China at Newchwong, Manchuria; and held the same position for a similar period at Yokohama, Japan, followed by one year at Belfast, Ireland.

In initiating the work of the school there were appointed seven leading business men of the State to act as a board of advisors, the president of the Chamber of Commerce of Portland, the master of the State Grange, the editor of the Labor Press, a leading farmer, a prominent banker, one of the high officials of a railroad, and a successful manufacturer. This board established as the first principle of the organization of the school of commerce, that it should be formed and fitted to promote the welfare of and interest in the industrial and commercial productions and prosperity of the State, and inasmuch as the larger percentage of the products of the State necessarily must find a market in other parts of the world, it was determined that the scope of the school should include an extremely broad and comprehensive study of world-wide trade and commerce.

The State of Oregon has numerous seaports where vessels can load the produce of the tributary country for shipment directly to all ports and parts of the world. The plan of the school's work, therefore, must embrace the study of the world's markets and the world's methods of distribution, and their utilization by the adaptation to the resources and demands of the State.

Oregon has perhaps the largest unused potential water power of any State in the Union. It contains one-fifth of the standing timber of the United States. It already has achieved a standing as one of the leading States in the dairy industry. Its production of live stock has already grown to such an extent as to make it prominent in that field. Its output of wool and mohair is extremely large. The development of woolen manufactures has grown to such an extent that it shows for the State a great future in that direction. The production of apples, prunes, pears, cherries, berries, and various other fruits and vegetables has been so well established that Oregon is in the front ranks as a fruit-growing section. Oregon preserving, canning, and fruit-juice factories are finding markets for their products in various parts of the world. The State is one of the leading paper manufacturing sections of the United States. Its vast water power, great diversity and extent of natural products,

its location practically as well as actually on the sea, gives the State the assurance of becoming one of the leading sources for manufacturing as well as food supplies of the Union.

This commercial and trade development, however, demands and necessitates a world market. The problem, therefore, of creating a school of commerce, that shall assist in the development of this greatly diversified industrial life, is one of vast magnitude, requiring a broadly constructive conception of its duties and possible services and a substantial foundation upon which to build and rest. It was the decision of the director and the board of advisors, therefore, that this vast work neither should nor could stand alone and be successful, that it should not be conceived or considered as a purely State organization, independent of outside connections, but that it should have intimate relation with and the aid, assistance, encouragement and cooperation of the Federal Government.

To bring about the best results, it was decided that the School of Commerce and its activities should be actively associated with the Chamber of Commerce of the city of Portland, the latter representing the concentrated commercial effort of the whole State and having a membership of about 4,500 persons. The director of the school of commerce, therefore, was elected one of the board of managers of the bureau of trade and commerce of the Portland Chamber of Commerce. This connection places the school of commerce in close contact and harmony with the practical trade and commerce of the entire State, and, to a certain degree, gives the director intimate familiarity with the trade of the entire Northwest, more especially with that of the Columbia River Basin. It also keeps him in touch with the work and aims of the National Chamber of Commerce, the headquarters of which are at Washington.

By conferences with the Department of State and the Department of Commerce of the Federal Government, the school of commerce of the University of Oregon has been accorded a recognition that gives it important benefits derived from the machinery of these two great departments of the Government. There has been established, therefore, as part of the school of commerce, the department of commercial and industrial service. This department is intended to be and do just what its name implies. Its primary function is to be of direct and practical service to the commercial and industrial interests of the State and the citizens of the State. It is intended that this department shall be the central collecting point and source of distribution of information regarding all of the vast and diversified resources of the State, and upon it is devolved the duty of devising and adopting such methods of investigation and instruction as will aid to the largest degree in the development of these resources.

The plan of procedure to date has been for the director to select some one or more of the leading industries and, through the cooperation of those directly concerned in each industry, to formulate a complete list of questions covering the essential features of the trade, and of a character that, by the answers elicited, will aid these industries in creating and enlarging their market. As an example, the director, with the assistance of the Association of Northwest Box Manufacturers, prepared a series of questions covering the market demands and possibilities of box shooks throughout the world. The main points covered by these questions were: Quantity of box shooks imported into each consular district; character, dimensions, and details of the construction of the boxes; variety of wood or material used; the section or district from which these boxes were imported into the consular district; the price per foot board measure paid for each variety; the special fitness of the material for the uses to which the boxes were applied; names of the leading dealers who purchased the boxes; rates of duties and port charges; and such other information as would give to the manufacturer in Oregon a clear understanding of the conditions existing in each consular district of the world. These questions were compiled in their logical order and handed over to the Department of Commerce and the Department of State. By these

departments they were forwarded to the consular and commercial representatives in various parts of the world where there was any trade or possibility of trade in box shooks. Replies came through the above departments and copies of them were forwarded to the school of commerce of the University of Oregon. From these replies data were compiled and given out by the university to the box manufacturers and public of the State. Thus the manufacturers were brought into direct communication with the foreign dealers and users of boxes, with an understanding of the trade conditions to be met and the specifications required. As a result, considerable trade in this industry already has developed. This investigation disclosed the fact that the spruce lumber of the Pacific Northwest is especially adapted to the manufacture of boxes, and that for a great many box purposes, it is much superior to the lumber of Norway and other European countries. There is absolute assurance of a splendid development of trade as a result of this survey made by the University of Oregon.

Other lines of investigation of the same nature have been carried on in much the same way. A complete study is being made of the economic features of dairying and of the cost of production of milk and milk products in all their various forms, the trade and its development in not only all of the milk-producing countries of the world, but also in the various milk-producing States of the United States. This information will be presented in such a form that comparisons of conditions and possibilities in any one section with those of any other section in the world may be made easily and quickly. The Oregon Agricultural College and the State food and dairy commissioner have been called on to make investigations as to the cost of milk production of the various sections of this State. From all of this material, combined with similar information from other States and sources, there is being prepared a bulletin which will give to the Oregon producers and dealers in milk, a complete and detailed knowledge and understanding of the world's production and consumption of milk, and the various costs entering therein. There will be shown the possibilities of the State, in its various sections, in the production of milk and milk products for the world's market in competition with the rest of the world, whether Oregon is in the economic range of the possibilities of world competition, and if conditions are favorable to the expansion of the industry. Dairymen, from this bulletin, will be able to form an opinion based upon exact knowledge as to whether or no they are in a position to enlarge their dairy business with a favorable opportunity for success.

The department of commercial and industrial service also made a world investigation of the markets and possible markets for potatoes; showing the cost of the production of potatoes in all parts of the world; the uses to which they are applied, and the values in each of these; the prices that the growers secured in various sections and for various periods; the comparative values when used for human food, stock food, starch, alcohol, etc.; the status of the competition of potato starch with corn-starch; and, in a word, as complete a knowledge of the economics of the production and utilization of potatoes as could be secured. This was published in bulletin form, and by its distribution proved to be immensely useful to those interested in the development of the potato industry.

A special study of the economic phases of the production of flax fiber and a showing of the production and trade in flaxseed also is nearly completed. The State of Oregon recently appropriated considerable money for experimentation with flax culture and, from present appearances, there is found great encouragement for the possible production of a very high grade of fiber flax in Oregon.

The director of the school of commerce was selected as chairman of the hydroelectric commission of the State to prepare a world's investigation of the development of the hydroelectric powers in relation to the States and governments, the condition of their development, the cost per horsepower of hydroelectric energy, the uses to which the power is applied, prices charged the consumer for its use for different purposes, and the many and various other phases of the question. Through the

Department of State, this work of the hydroelectric commission was combined with the investigation suggested by the Department of the Interior and the Department of Agriculture. These now are complete, and from the results of this investigation the Department of Commerce has prepared charts and data regarding this development, the information being sent to various commercial organizations in those sections of the United States that are interested in the development and utilization of hydroelectric power. This information also is to be forwarded to the University of Oregon for use in instruction in the school of commerce. A complete bulletin based on this data is to be distributed freely to the people of Oregon.

One of the cities in Oregon conceived the idea of establishing a health resort formulated upon a well-developed system of mineral springs. This community formed a district and voted bonds for a considerable sum of money to be used for this purpose. The interested citizens were not familiar with the various forms and organizations for such developments, and were lacking especially in the necessary knowledge of how to create enterprises of this nature by districts or communities. They appealed to the university, and a world-wide study was made whereby they were furnished with all of the data concerning the various health resort organizations. The only models to be found of the exact nature desired, where districts were created for such purposes, were in Europe. By providing the Oregon community with all of the details secured from many sources, their work in the creation and establishment of their enterprise was made far more economical and substantial than it otherwise would have been.

Other industries which have received the attention of this service department are: The supply and utilization of potash for fertilizing, with special reference to the kelp beds of the Pacific coast; the competition created by the importation into the United States of cheap Chinese eggs; the merits and economic status of wood blocks as paving material, and various minor investigations.

One of the surprising features of the experience in this line of work has been the finding of such vast amounts of substantial and reliable information waiting only to be gathered, ordered, published, and so made available. When proper and definite methods of investigation and collection are carried out in the manner herein suggested, there can be secured practically all of the information that is required to give a thorough and enlightened view of almost any industry. The work merely, or mainly, is the science of gathering information already prepared, from all of the various sources of Government, State, and private organizations and individuals, comparing, checking, condensing, compiling, and publishing. Insofar as conditions in Oregon are concerned, these and the other available sources of information supply nearly all of the requirements.

The examples cited merely point to some of the activities of the department of commercial and industrial service. This form of activity has proven so particularly helpful that it has developed into a well-defined and permanent policy of the school of commerce to extend the work until it has covered every important industry of the State.

In this line of work there has been demonstrated the absolute importance and necessity of intimate and substantial connection between the Department of Commerce of the United States and the various schools of commerce throughout the country. In the investigation carried on by the school of commerce of the university the aid and assistance of the United States Department of State and Commerce have proved to be absolutely essential, as has also the assistance of the various State organizations in the line of industry under investigation.

Another important feature of the work being done and planned by the school of commerce is the securing of the services of the individual representatives of the national departments who have made detailed investigation of commercial conditions abroad. These men, on their return to the United States, are ideal lecturers before any school of commerce. They can and do give directly and in person condensed and authentic

information that is of immense help to the students, and through them to the State and country. Such intimate connection and touch with the business of the world can not help but be a source of substantial information and inspiration that will aid very materially in the individual and collective advancement of the student and of the industrial life of the community. It is, of course, of the utmost importance that the results of these investigations in foreign lands should be given directly to the communities specifically interested. The agents of the Departments of State and Commerce can be sent only to such districts as desire and need the information to be given. This information, these lectures and talks, centered in and at the schools of commerce of the country will become permanent sources of instruction for the entire people of the State, as well as to the various commercial organizations and individuals directly interested. Thus the State University, through its school of commerce, will become the center of world information and knowledge in the subjects and along the lines of industrial and commercial interests in which the States is engaged, or in which the resources of the State are potentially concerned. The school will be a source of knowledge and information of tremendous value. The director and his assistants will become the agents of the State in making more effective and useful the splendid work being done by the Federal departments. They will become State agents for the purpose of carrying on investigations that are imperative to the fullest development of the State's resources. By this system schools of commerce will become the most valuable assistants to the central Government, in gathering as well as in disseminating such information as the citizens of the States need.

One of the weakest phases of the present work of some of the Government departments lies in the fact that the investigations and the distribution of information under their direction is not sufficiently definite with reference to locality, or it is not concentrated in such a way as to bring the most efficient and useful results to the States and localities most vitally concerned. It is, therefore, a right and proper State function to create an organization of its own within its borders that shall become the means of bringing about this to-be desired result. The State should provide the means of gathering and disseminating information and so make the work of the Government departments in this direction more specific and definite and more directly useful to the States themselves. Specifically, the States should provide as complete a machine to assist the Departments of State and Commerce in securing and giving out information as is provided for the Department of Agriculture by the various State agricultural colleges. It is just as important that the States should have this connection with the Department of Commerce as with the Department of Agriculture. The Department of Commerce of the General Government is becoming and is going to become more and more an important factor in all lines and phases of commercial development, education, and instruction from this time on. The completion of a system for the most effective use of its activities can be carried out in no better way than for the State to create schools of commerce that shall be practically if not actually connected with the Department of Commerce. The preparation of a plan for a connection of this character should be one of the most important features and duties of this conference on commercial education.

In the instruction work in the school of commerce at the University of Oregon there is a course of practical lectures by the leading business men and manufacturers and those associated with large industrial activities. This course of lectures is given freely and with great pleasure by the leading business men of the State to the students, who have found the talks most inspiring and helpful. The University also has provided a series of lectures by the representatives of the various boards and commissions of the State government. Students of the school of commerce in their junior year secure the benefit of this work.

The director and his associates are endeavoring to inaugurate a system for the exchange of professors between this institution and some of the South American universities. The main purpose in this is to secure from the South American countries men who are, primarily, conversant with the commercial methods, usages, and characteristics of the State from which they come. Incidentally, they will be expected to teach commercial Spanish, but this will be subordinate to the instruction they will give in commercial relationships. In return it is planned to send to these universities some men who are qualified to teach the English language, particularly commercial English, and who also are qualified to carry into those countries a knowledge and understanding of Oregon trade and commerce possibilities, giving the students there and their men in commerce an understanding of those products of this State that may be exported to that particular country; and, in addition to giving instruction in the matter of exports from this State, also to make a study of the consumption here of products which are produced in the States to which they are accredited. In a word, it is to be an exchange of commercial instructors, who also shall teach language.

Another plan which is being worked out is the establishment by the university, in connection with the school of commerce, of a complete commercial museum of the State's resources and products, in connection with each item of which there will be given a short history of its development, the extent of the markets for it, and such other pertinent facts as will be of value.

At the present time the courses of instruction presented in the school of commerce include principles of accounting, cost accounting, solution of C. P. A. problems, auditing, business law, business organization and management, salesmanship, advertising, psychology of advertising, purchasing, credits and collections, methods of commercial teaching, commercial correspondence, domestic commerce, foreign commerce, international commerce, life, fire, marine, accident, and liability insurance, municipal administration, municipal accounting, resources of the Northwest. Other courses that will be introduced later include retail selling and store management, lumber cost accounts, institutional accounting, marketing methods and selling, etc.

The students in commerce at the present time have splendid facilities through the students' cooperative store, which is at their disposal for laboratory purposes. The system of cost accounts used and the actual accounting figures and transactions of the store are to be used for classroom work. The class in auditing audits the accounts of this store and the class in purchasing wrestles with the buying problems.

The students themselves have formed a "commercial club," which holds regular meetings once a week for exchange of commercial information, reading of papers, discussions, debates, etc. This organization is both successful and popular and a source of increased interest in the work of the school.

Classes are held in Portland every two weeks for the certificate members of the American Institute of Banking, who are studying problems in banking, foreign exchange, finance, and the history and development of modern banking. With the beginning of the year 1916 biweekly lectures will be given to the "Credit Men's Association of Portland on subjects dealing with credits and collections and related problems in accounting.

Through the extension division of the university weekly letters are sent out to teachers of commerce in the high schools throughout the State. These letters deal with the method of presenting and teaching the various commercial subjects: Book-keeping, stenography, typewriting, commercial arithmetic, business English, salesmanship, etc.

Through the courtesy of the extension division of the University of Wisconsin arrangements have been made enabling the University of Oregon to offer, through its extension division, various business courses, using the subject matter of the Wisconsin curriculum. Every range of business subject is covered, including bookkeeping,

accounting principles, cost accounting, solution of C. P. A. problems, history and types of business organization, the law of contracts, the law of sales, the law of corporations, the law of insurance, retail selling and store management, cost accounting for printers, credits and collections, etc.

Though comparatively young the school of commerce of the University of Oregon has seemed to put new life into the students, and they are taking hold of the work with great interest, one evidence of which is the fact that 10 per cent of the entire enrollment at the university is majoring in the school of commerce.

NEW YORK UNIVERSITY SCHOOL OF COMMERCE, ACCOUNTS, AND FINANCE.

By JEREMIAH W. JENKS,

Professor of Government and Director Division of Public Affairs, New York University.

The New York University School of Commerce, Accounts, and Finance was established in 1900. Already at that date there had grown up among business men an earnest demand for scientific training and special preparation for business, although since that date this demand has increased enormously. The purpose of the school from the beginning has been to combine with general courses that are ordinarily expected to widen the intellectual vision and raise the ideals of students such a practical training as would fit young men best for the technical work of a business career. Attainment of these two aims is sought partly by the subjects chosen for study, partly by the methods of teaching employed, and partly by the type of teachers selected.

From the beginning the school has laid great emphasis upon a thorough training in accounting. Enough of the elements of bookkeeping must be taken so that students will understand the usual forms employed in business houses, but special emphasis is placed upon the principles underlying accounting, so that a graduate may be able to build up his own individual system adapted to his business needs, and so that in analyzing—whether as a manufacturer, a banker, a buyer, or seller—the accounts of any establishment, whatever the forms employed, an accurate understanding may be readily secured. In later years, of course, as the school has grown and as it has undertaken more and more the task of fitting men for special lines of business, special additional courses in accounting are offered; but, relatively speaking, accounting is not now so dominant a feature in the school as in the earlier days, although a knowledge of the principles is still required of all graduates, and a large proportion of the students take a number of accounting courses, making that subject really the foundation of their special work as they fit themselves for positions as chartered public accountants.

Besides accounting, and practically parallel with it in importance, stand now such subjects as economics, business finance, with especial reference to corporations, business English—a most needed and important subject—and the elements of law as it affects business, with especial reference to contracts and agency.

Beyond these fundamental subjects the work develops in many directions, covering advanced study in the fields of economics and statistics, of business organization and management, of economic and commercial geography, of marketing, including salesmanship and advertising, of trade and transportation both on land and sea, of social problems as they affect business, of government with especial reference to its relations to business, journalism, English, public finance, and a practical training in such foreign languages as are becoming of prime importance in the business world of the United States, special emphasis being placed upon Spanish and German, with also training in commercial French and Italian.

Not only are the subjects of study selected in such a way as to secure practical, helpful results in business, but the teachers keep constantly in mind the business aspects of the studies. I have just mentioned commercial Spanish, German, French, and so on. Likewise, in the course in business English special attention is given to the principles in accordance with which business correspondence should be carried on—advertising letters, selling letters, collection letters, the preparation of business circulars—all types of business English which must be employed effectively to insure success, but which so few business men are really competently trained to handle.

In the nontechnical courses this same practical end is kept in mind. The classes in economics do not put their time in so much upon abstract theories as upon the practical application of economic principles to business conditions. The classes in government, while explaining the form and principles of government, emphasize also the close relationship between government and business, the way in which legislation determines business conditions, and the way in which business conditions affect the actions of legislators; and so on throughout.

Moreover, this same thought is regularly kept in mind in the selection of teachers. While the regular professors and instructors are men well trained in the underlying principles of their respective specialties, many of them have also had practical business experience or keep continually in touch with business men, so that their work shall be regularly adapted to the needs of practical business. Besides the regular professors many lecturers who are business men, but who have also a taste for scholarly pursuits and who treat their business from the scientific viewpoint are engaged to give one or possibly two evenings a week to this work of helping business men see business from the scientific angle.

The spirit that animates the school is commercial in that it keeps the young men stimulated to see the practical side of their work and the way in which their studies are to help improve the quality of their business activities; it is scientific in so far as it leads them all to see that business after all is founded upon scientific principles; that it is based upon natural science, psychology, law, and the other special sciences that are connected with human activities, and that the business man to be most successful in business must be able to analyze his work in a strictly scientific way. It is the belief of the school that theory and practice must be interwoven; that there is no fundamental separation between culture and practical training; that all subjects in the curriculum have the cultural aspect and the practical aspect and that neither must be lost sight of. Moreover in the school is found the eager enthusiasm common to professional schools but often lacking in our arts colleges. The law schools and the medical schools generally have this spirit which leads to the most ardent and at the same time the most thorough work on the part of the students. Men coming to the New York University School of Commerce from arts colleges and often from some other professional schools call attention to this spirit of eager industry that is found in the classes. The professors feel it from the frank inquiries made by students, in the equally frank criticism of statements made by the professors, and in the readiness to support or to oppose a general principle by the citation of personal experiences.

The school was founded primarily to help young business men. In consequence, the entrance requirements have been adapted to meet their needs. The regular students must have a recognized four-year high-school course or a sixty-count qualifying certificate issued by the New York State Board of Regents. Special students, at least 21 years of age, who have had some business experience are admitted to take up courses for which they show themselves qualified. Many such students after remaining in the school for a time and seeing its advantages become regular students. On certain subjects, however, the certificates of high schools are not received. All students must take an examination in English if they enroll for more than four courses or for any English course. Moreover, students who wish to enter a course in the principles of accounting must take an examination in bookkeeping. If they fail in

that, they must take a course in preparatory accounting which covers the field. These examinations are intended to test the student's ability to take profitably the course in business English and the principles of accounting. The courses are not technical, but there are so many men who have a very deficient knowledge of grammar, or punctuation, or spelling, that it seems essential that such examinations be given.

A very large majority of the students are young men who are working for their living. In consequence, the largest classes are the evening classes. If a young man has had at least two years successful experience in business, carried on while he is doing his university work, he must obtain a satisfactory credit for 900 single hours of evening work with an average grade of not less than 70 per cent in order to graduate. This means 10 hours of classroom work per week for three university years of 30 weeks each, or one session of two hours five evenings a week during this period.

The day students are largely young men not actively engaged in business so that they can give substantially their full time to the work, as do regular college students. These young men, not having the beneficial training of experience in business, are required to secure a satisfactory credit of 1,200 hours of class work and an average grade of not less than 70 per cent. This means at least 10 recitations per week of two hours each for two university years of 30 weeks. Those satisfactorily completing this work receive the degree of bachelor of commercial science. Those holding this degree may be awarded an advanced degree of master of commercial science upon completion of 180 hours of advanced work with the high grade of 85 per cent and the submission of an approved thesis dealing with some subject in the field of commerce, accounts, or finance which gives evidence of original research and thought. That is, such students must take three two-hour courses for a single year and prepare a thesis of such quality that it will be approved. Special students, who have not a sufficient entrance requirement to become regular students, may receive a certificate of proficiency after completing in a satisfactory way the work done by regular students, but can not receive the degree unless the standard of entrance requirements has been met.

Provision is made also for part-time students to enter courses for which they are particularly equipped, even though they do not take full-time work.

The growth of the school of commerce has been remarkable, a proof that it is satisfying a real need. The attendance has leaped from 1,805 in March, 1913, to 2,260 in March, 1914, and 2,645 in March, 1915, and now, October 29, 1915, the increase over last year is already 342, so that the total registration for 1915-16 is sure to be much more than 3,000. Such results have been accomplished with also a steady improvement in requirements and in quality of work.

A very considerable number of students entering this technical school have already received the degree of bachelor of arts or bachelor of science from other colleges. For the last two or three years in the neighborhood of one hundred and forty or fifty college graduates have been taking this special training to fit them for a business career. Such students are expected to do a higher grade of work than those with less preparation; and in many instances—especially if they ask for credit in the university's graduate school—they are required to do special research work of some type in connection with the regular commerce classes.

Three years ago, recognizing the increasing interest that business men are taking in governmental affairs, and the still greater interest that they should take in the work of our public officials, the division of public affairs was established. In this division special courses in government are given in connection with the various commercial courses, and now some course in government is required for all graduates of the School of Commerce. The larger proportion of the students, of course, take one or two courses in this field because of their interest as business men in public affairs. Special arrangements are made, however, by which through groupings of the courses in government, in finance, in statistics, and in other subjects that will especially fit them for the work, men are trained for positions in either the Federal,

State, or municipal governments. Some young men are already entering these courses with the special purpose of later seeking a career in the Government service, and there is every reason to believe that this number will rapidly increase.

In order to put its equipment as fully as possible at the service of the public, last year the university offered a number of special courses to young men and women in the civil service of the city of New York. These courses were practically all of them school of commerce courses, bookkeeping, principles of accounting, business English, secretarial work, and similar subjects. The classes were held in the municipal building, the sessions being held partly on city time, partly on the time of the employees.

After the classes along these lines had shown their efficiency, similar courses were organized for the engineering department of the city, the instruction being given under the general supervision of the engineering department of the university. Some 150 students registered in these engineering classes. So that, on the whole, last year the university was giving instruction to some 400 men and women in subjects that would especially assist the employees in doing their municipal work.

Other special lines of training organized and developed in a similar manner lead to the professions of journalism for which the number and character of the courses assures completeness and thoroughness of training. Likewise special courses in other fields qualify men for positions as public accountants, as advertising agents, as employees in banking and brokerage houses, and other lines of business.

In the year 1915 there was established a number of "Business fellowships," in order to bring the university into much closer touch with the best business houses and to enable the school to render a much more direct service in the way of helping them to secure men of the highest ability, especially to meet the crying demand for men to enter the work of developing the foreign trade of the United States. A number of important business houses arranged to cooperate with the university under a plan adapted to suit individual cases by offering to a limited number of college graduates positions which would enable them to combine this scientific study of business principles with actual business practice. These openings are available for men who have specialized in any one of several different lines. Some of these companies, such as the United States Steel Products Co., a subsidiary of the United States Steel Corporation, and the Western Electric Co. prefer men who have been previously trained in mechanical or chemical engineering; others, like the National City Bank, the American Telephone & Telegraph Co., and the Ingersoll Watch Co., prefer men with a thorough training in mathematics, economics, and commercial geography. Most houses engaged in the foreign trade wish men with a knowledge of the language of the country in which they are extending their business. They wish to fit men for work in Russia, South America, India, and China, as well as in the United States.

The companies usually pay men employed under this plan a sum nearly or quite sufficient to cover living expenses and university tuition, say, \$50 to \$75 a month. This sum, payable monthly throughout the year, is offered as a university fellowship. The holder gives part of his time during the college year and full time during the summer vacation to practical work in the business establishment, where he is given the opportunity of learning in practice different phases of the business, so as to qualify him eventually, if he is of the right caliber and character, for an important executive position. The remainder of his time is devoted to the study of business subjects in New York University. Each man is considered individually, his work and studies being adapted to his needs and those of his employer. Some give little time to the university work, others give a large part of their time. The needs of the man and of his employer are met.

The fellowship covers a calendar year, but is renewable with presumably an increase in pay. If the men show sufficient ability and character when their training is completed, in from one to three or four years, they will be fitted to take important positions in the employ of these companies.

The participating business houses are among the best in the country and the training afforded should fit a good man for rapid advancement in the field of his chosen work, whether with these concerns or with others.

As soon as these arrangements were completed with a number of business establishments, a circular letter was sent throughout the country to the good colleges and universities of all types—some 80 institutions in all. The response was most gratifying. More than 300 applications for these positions were received. During the first year it was thought best by the business houses, as well as by the university, that the plan be considered experimental, so that only 15 fellows have been appointed. These, however, were all select men, among the best in our universities. Several of them from our largest and best universities, were members of honorary fraternities such as Phi Beta Kappa or Sigma XI. Most of the establishments entering into the plan have in mind especially the training of men for the export trade. Some of them, however, have no such thought and the plan is, of course, equally applicable for training in business of any type. It is an opportunity for young men to secure positions that promise well for the future; it is an opportunity for a business house to get the pick of the ablest young men in the country who are willing to start at the bottom and get themselves thoroughly trained for a business career.

Much has been said of late years of the lack of training of the representatives of our business houses who have been sent to foreign countries to develop the American trade and most unflattering comments have been made as to the relative inefficiency of such men as compared with those from Germany and other countries. The main difference, of course, has been that the German salesmen have been men with scientific training as well as business experience. This is an opportunity to give American young men a business training fully equal to that received in Germany, with a business experience specifically adapted for the employer's own establishment. It is believed that the plan will continue with a larger measure of success.

The fellowship plan has added quite decidedly to the number of college graduates in the School of Commerce of New York University. Not only are those receiving fellowships college graduates, but other graduates, stimulated by the opportunity, have come to the school with the thought of securing such positions in the future. So many college graduates are now in residence that it seems practicable to provide special classes for them in which more extended and more thorough work can be done than in classes made up of men whose preparation is less complete. Already several such classes have been established, and in the very near future it is planned to organize a special graduate division of the School of Commerce open only to college graduates, and offering, after the completion of a course specially fitted for men of such training, a special degree which will be a recognition of the higher qualifications of the men taking the course. The New York University School of Commerce, Accounts, and Finance will then be in a position to render the maximum service to business men by giving training adapted to all classes of competent and ambitious men desirous of business training. Those who through lack of opportunity are qualified to take only special courses may take them, while those with a good preparatory training, such as qualifies one to enter most of our regular colleges or professional schools, can get as good a training as they are able to secure in two or three years especially devoted to that work. Besides these, in the Washington Square College which gives a regular four years training leading to the degree of Bachelor of Arts or Bachelor of Science, there is the opportunity during the last two years to specialize in commercial courses, so that with the Bachelor of Arts or Bachelor of Science degree one receives an excellent training in business theory, without, however, business practice. Finally, there is offered a course of special thoroughness in both theory and practice suited for men with exceptional personal qualities and higher training who shall be fitted individually, with attention given to each man's need, for the work required of men engaged in higher administrative service either in business houses or in the service of the State or municipalities.

THE AMOS TUCK SCHOOL OF ADMINISTRATION AND FINANCE, DARTMOUTH COLLEGE.

By DIRECTOR H. S. PERSON.

The Amos Tuck School is a specialized, professional school of training for business, a semigraduate, finishing school for college graduates who plan to enter business. Its course consists of two years. The first year is of a grade equivalent to the senior year of an American college, to which are eligible for admission candidates who have completed three years in any college of high standing. The second year is a purely graduate year, at the end of which students receive the degree of master of commercial science. The curriculum of the first year represents a transition from the liberalizing courses of a college to the specialized courses of a professional school of commerce and administration; the curriculum of the second year is a compact group of specialized, professional courses, with a moderate flexibility allowing preparation for special branches of business, including foreign commerce.

The purpose, organization, and actual work of the Tuck School can not be understood without more detailed reference, as a background, to its function in the entire educational system. Its organization makes it an integral part of the entire machinery of education which performs the sequence of operations which prepare our youth for life. It does not need to perform a number of educational functions which its relations to the general system of education and its requirements for admission enable it to throw upon the preparatory school and the college. It is therefore enabled to concentrate its efforts upon specialized educational functions of an advanced, professional nature relating specifically to preparation for business, and to apply these efforts in behalf of a selected group of young men already mentally intensified and broadened. In explanation I purpose to give the educational life history of a graduate of the Tuck School, for our purpose to-day, from the point of view of preparation for commerce.

LIBERALIZING EDUCATIONAL PROCESSES.

The liberalizing educational influences which have molded the mind and character of a graduate of the Tuck School are represented by three steps. These are: (1) The elementary school, taking the child to about 15 years of age; (2) the secondary school, preparing him for college, and taking him to about his nineteenth year; and (3) the college, taking him, so far as the Tuck School is concerned, three years further, to about his twenty-second year. The elementary and secondary schools as liberalizing educational agencies require no explanation. Of the three years of college preceding admission to the Tuck School, however, I wish to speak a moment, because of the influence which the Tuck School's requirements for admission have on the individual at that stage of his career.

From the point of view of the Tuck School, the three years in Dartmouth College are but preparatory years; from the point of view of Dartmouth College, however, the first year in the Tuck School is, for those students who matriculate in that school, the senior year. The college accepts the certifications of the Tuck School, credits them to the student, and confers upon him the bachelor's degree. Therefore, during these four years—the three years in the college and the first year in the Tuck School—the student, in electing his courses of study, is under three influences—the college requirements for a degree, the Tuck School requirements for admission, and the Tuck School requirements of the first year of that school.

1. The college requirements for a degree are intended to prevent too early specialization. They divide the curriculum into three fields: The languages, the physical sciences, and the social sciences. A student may emphasize one of these fields in his selection of courses, but he must take a minimum amount of work in the other two. Therefore, while he usually emphasizes economics, political science, and history, he must not neglect chemistry, physics, Spanish, French, German, and so on. In short,

in addition to a mental development, he must become well informed in one of the three fields, and usefully informed in the other two.

2. The Tuck School entrance requirements also have an influence on the student's choice of courses and quality of work during the three years in the college. In the first place, he must show a high grade of ability and application; he must attain, for admission to the Tuck School, an average rank for the three years equal to or above the average of the entire college. He must not merely pass his courses; he must be in the upper half of those who pass. This selective requirement gives the Tuck School a homogenous group of able, purposeful men, capable of serious and sustained application. This explanation is important for the light it throws on the quality of instruction which the Tuck School is able to offer, and on the quality of response which it is able to demand of its students. In the second place, the school specifies that the student must have emphasized, during the three years in college, the social sciences—history, political science, sociology, and particularly economics; and he must have studied in college one modern foreign language continuously for two years. Consequently the Tuck School does not have to offer as part of its curriculum the conventional courses in these subjects; its students enter with moderate specialization in these subjects as a foundation for specialized business courses which it is the function of the Tuck School to offer.

PROFESSIONAL EDUCATIONAL PROCESSES.

With the work of the Tuck School begin the professional educational processes. This divides into two parts, the transitional, or general professional courses of the first year, and the specialized, advanced professional courses of the second year.

1. The first-year course of 18 hours per week is taken en bloc by all students, there being no electives or alternatives. This block of courses compels study of all the primary functions which are present in all fields of business; the financing of a business (banking and corporation organization), the records of business (accounting and statistics), the technical organization and management of a business (business organization and management), the production and marketing processes of business (resources and industries of the United States, resources and industries of foreign countries, commercial Spanish, French, and German). For two reasons the school requires study of all of these functions by all students in the first year; first, because they are common to all business institutions—the trading house as well as the manufacturer; second, because our records of young men in business show that the majority do not know in advance exactly where they will find their niches in a business, and their training should provide a rudimentary knowledge at least of all possible niches.

2. The work of the second, or graduate, year of the Tuck School comprises:

(a) A group of courses, required of all students, which represents more intensive study of the primary functions of business specified above, and in addition commercial law. There is therefore continued the study of accounting, modern language, organization and management, corporation finance and investments, the relations of the business man to the banker, and there is added a comprehensive course in commercial law.

(b) A group of courses, elective by the student, which permits moderate specialization in preparation for a particular business, such as foreign banking, or chamber of commerce work; or for professional service in performing a particular function of business, such as accounting or management engineering. The work in these courses is intensive, and the relations of the instructor in a particular field to the students specializing in that field is very close, for the number of students specializing under any one instructor is small.

(c) Bringing the instructor into much closer contact with a student specializing in his field and permitting a very large degree of personal direction and inspiration on the part of the instructor, is the requirement of a thesis of every student. The thesis work can not be merely perfunctory, and the thesis can not be merely a compilation

or an essay. The school attaches great importance to thesis work, and the student must attack this part of his work with equal seriousness. Whenever possible, and in most cases it is possible, the thesis must represent the solution of a concrete problem. For instance, a thesis in accounting will represent the work of a student in the construction of an accounting system for some plant in the Connecticut Valley in the vicinity of the Tuck School; a thesis in management will represent a report on the actual solution of a specific problem of management in another neighboring plant; a thesis in selling may represent the working out of a sales campaign, to be put into actual operation, for another plant; a thesis in chamber of commerce work will represent the actual work of the student in the service of a neighboring city's chamber of commerce—four such organizations are cooperating with the Tuck School—and so on.

Now it occurs to you immediately that a school of business administration and commerce, located back in the country, 150 miles from the nearest important port, must experience difficulty in forming business contacts which will permit thesis work of this kind for students specializing in commerce. The difficulty is real, but the instructor in charge of that field is attacking the difficulty with gratifying results. He finds problems for thesis subjects by correspondence with institutions engaged in foreign commerce—banks, trading companies, export manufacturers, and port directors. They are able to specify a great variety of problems which they desire to have investigated and solved, the solution of which is possible by research at the Tuck School, supplemented by periodic visits and investigations in the port, plant, or business house concerned. For example, one prominent exporter offers a problem by the question, "Are there not exaggerated ideas as to the unfavorable influence of the tariff in ——— on the chances for selling American goods in that country?" Another proposes the problem, "What are the influences of American investments on American trade in foreign countries?" At this very moment a student is working out, as his thesis problem, a sales campaign in a particular foreign region for a particular manufacturer of a particular product in New England.

The supervision of the thesis work of each student affords opportunity for a large amount of personal instruction, not only on the particular subject, but also in the field around the subject. This supervision is continuous and real. Each week the student files a report of work on his thesis, the total amount of time, the time spent in reading, correspondence, visits and interviews, and, not least important, the time spent with his supervising instructor. In fact, in thesis supervision the Tuck School strives to realize most completely its supreme aim—to become recognized as a teaching institution achieving a maximum of personal contact, for purposes of instruction, direction, and inspiration, between instructor and student.

I have presented to you in a general way the educational history of a graduate of the Tuck School. We do not consider these educational processes as sufficient to make him a complete business man. But they do enable him to go out into his apprenticeship an adaptable man, broken in sustained application, well informed concerning the fundamental facts and principles of business, and capable of rapidly making a useful part of himself whatever comes to him from observation, experience, and the counsel of his superiors.

In conclusion I desire to refer again to training in the Tuck School for foreign commerce, and to recapitulate what a student seeking such training secures from the sequence of educational processes already described.

1. In the preparatory school and in the college before entering the Tuck School, he has experienced the mentally strengthening and liberalizing influence of study in the realms of the physical sciences, languages and literature, and the social sciences, with emphasis on history, political science, and especially economics.

2. In the first year of the Tuck School, and in part of the work of the second year, he has had thorough training in all the primary business functions common to all kinds of business.

3. In the second year of the Tuck School he has been afforded a considerable degree of specialized training for a special field or function of business, in the particular case, foreign commerce.

4. In the two years of the Tuck School he has had the following courses, in addition to foreign language, banking, etc., relating specifically to foreign commerce.

GROUP I.—2 COURSES.

A. Nature.

Study of the resources, industries, and commerce of the world.

B. Aim.

- (1) To show present industrial and commercial conditions.
- (2) To show causes of these conditions.
- (3) To show sources of raw materials and factors affecting their supply and distribution.
- (4) To show important consuming markets for food products, raw materials and manufactured goods, and factors affecting their demand.
- (5) To show nature of competition between nations for world markets.
- (6) To show how all these factors affect the exportation of United States goods.

C. Description of courses.

- (1) Resources, industries, and commerce of foreign countries.

This course considers the resources, industries and commerce of the principal countries of the world other than the United States.

The countries of Western and Central Europe are considered especially with reference to the fundamental conditions determining their industrial development; the organization of business; the influence of railroad, navigable river, and canal systems on industry and commerce; the character of competition for trade in neutral markets; the important distributing centers for foreign firms, etc. The successes of these countries in manufacturing for the export trade in certain lines of manufactures are carefully compared, the various reasons for success or failure analyzed, and the principal markets investigated. Special attention is given to such subjects as the method of manufacturing for orders, standardization of product, and organization and development of the export trade in the British cotton textile industry; and the strength and methods of the German export syndicates in the coal, iron and steel, electrical, chemical, and other industries.

Other important countries, Russia, China, Japan, India, Canada, Australia, are studied especially with regard to their present and potential demand for foreign-made goods, their supply of the raw materials of the industries of other countries, food supplies, their growth, and the development of local industry tending to decrease the importation of foreign merchandise.

This course also provides the basic information necessary for the courses on foreign trade technique and opportunities.

- (2) Resources, industries, and commerce of Latin America.

This course is designed for advanced students who plan to equip themselves for service in trading houses, chambers of commerce, or in export departments of manufacturing concerns. It investigates exhaustively the physical, social, and political conditions determining the nature of the extractive, manufacturing and commercial industries of the Latin-American countries; the probabilities of their future development; the possibilities of extending the trade of the United States with these countries; the methods by which such extension of trade is most likely to be accomplished, the factors determining the trade strength of England and Germany in these markets; and the questions of American branch banks, improved steamship service, demand for American capital investment, extension of credits, and sales agencies.

D. Reasons for emphasis on this group.

- (1) Fundamental to all exporting knowledge.
- (2) This is easier and better learned in college than after entrance to the actual export field.
- (3) Not only is the technical part of exporting difficult to teach in the usual manner of giving instruction, but it is doubtful if instruction can advantageously go into great detail on more technical exporting problems.
- (4) Export men claim that it is not in the technique of exporting that the novice is weak so much as in the broad general knowledge of markets, world competition for trade, geography, etc.
- (5) Most important of all, because most of our graduates who come into contact with exporting do so as manufacturers of export products rather than as actual New York exporters or employees in foreign service. These men need a knowledge such as given in these courses more than they do details of the technique of export selling, financing, and shipping.

GROUP II.—1 COURSE.

FOREIGN COMMERCE OF THE UNITED STATES.

A. Purpose.

- (1) To aid men who will come into contact with exporting because of their connection with manufacturing plants developing export trade.
- (2) To form a basis for more detailed study and thesis work for these men who intend to enter the employ of export commission houses and foreign bankers, and in service in foreign fields.

B. Nature.

- (1) General study of foreign commerce: Trade areas and routes; shipping facilities and regulations; rate making and traffic promotion; marine insurance; port development, equipment and management; and laws influencing foreign trade.
- (2) Detailed study of American commerce, showing the trend of import and export trade, present and prospective markets, raw material sources and problems of building up a national merchant marine, foreign banking, etc.
- (3) Detailed study of methods and forms employed by American exporters, including determination of sales methods, selection of agents, planning export campaigns, export agencies, advertising, use of cable codes, orders, packing, shipping formalities, extension of credits, and collections.

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION, HARVARD UNIVERSITY.

By EDWIN F. GAY,

Dean Graduate School of Business Administration, Harvard University.

The graduate school of business administration was established at Harvard University in 1908. It is strictly a graduate department of the university; the requirement for admission as a regular student is the possession of a bachelor's degree from an approved college or scientific school. Thus when they enter the business school the students are already fitted by their education and maturity to undertake serious professional study. The regular course covers a period of two years, and upon the satisfactory completion of an approved program of study students are granted the degree of master in business administration. A few men, who do not possess a col-

lege degree but who are qualified by business experience, are admitted as special students with a very restricted program of work.

The school aims, in the first place, to give thorough and scientific instruction in the fundamental principles of business organization and administration. Secondly, it aims to provide opportunities whereby each student may receive special preparation for the particular business career which he purposes to enter. The general plan of the courses of instruction is adjusted in accordance with these aims.

All students who are admitted as candidates for the degree are ordinarily required in the first year of the two year's program of study to take the following three courses: Accounting principles, commercial contracts, and marketing. These are basic courses which provide a broad foundation for advanced work in these subjects and for the more highly specialized courses in other subjects. In addition to these required courses, each regular student in his first year elects an introductory course in the group in which he wishes to specialize during his second year. In many cases first-year students find it desirable, especially when the introductory course is one of the required courses, to elect in addition another course which teaches principles of broad applicability, such as business statistics, factory management, or investments. All of the courses taken in the second year are elective and each student makes his choice in accordance with a well-defined plan aimed directly at training for a particular career.

During the current year the total number of courses offered in the school is 47. These are as follows: Accounting, five courses; commercial law, four courses; marketing, two courses; industrial management, three courses; general business problems, four courses; foreign trade, three courses; banking and finance, five courses; insurance, five courses; transportation, five courses; printing and publishing, two courses; chamber of commerce secretarial training, two courses; local public utilities, three courses; and lumbering, four courses.

Ability to speak and write clearly and concisely is of such importance to a business man that provision is made for instruction in English to correct deficiencies in the training of students entering the school. Although it might have been presumed that graduates of reputable colleges would have had an adequate preparation in English, it has been found that many of the students write faultily. Consequently instruction in English was introduced in 1914, given in connection with first-year work in marketing. Reports on specific marketing problems are written at frequent intervals by each student in that course and these reports are read and criticized constructively by a capable instructor in English. Credit for the course is not given until the student has satisfactorily met the English requirements. Defectively written reports presented in other courses are also referred to the English instructor. As a result of these requirements, the students have shown a marked improvement in their use of English.

The school has 10 instructors on its staff who give all their time to teaching in the school and who represent a blending of academic and practical training. A majority of the members of the permanent staff are men, schooled in economics, who have had more or less actual business experience; one, who is an exceptionally good teacher, is a man of no academic antecedents but of broad business training.

In addition to the teachers on the permanent staff, instruction is given by a number of men engaged in active business, each of whom conducts a half-year course or a full-year course in the school. The courses in investments, railroad rate making, fire insurance, life insurance, and advanced factory management are successfully given in this way.

The school has been fortunate, furthermore, in securing the cooperation of a number of business men willing to divulge the facts of their experience and able to analyze and impart these facts in cooperation with professional teachers. Each of these outside lecturers gives one to four lectures. In several courses instruction is given

largely in this way. This type of instruction, by outside lecturers, long regarded in academic circles as very difficult if not impossible of attainment, has been successfully developed in this school by a careful organization and correlation of the work. The plan is to prepare a detailed organic outline of the course and then to indicate to these lecturers precisely what topics it is desired that each should discuss in the light of his own experience. Such a course is in immediate charge of a resident member of the staff, who plans the work and supervises the field work, reports, conferences, and examinations. In this way it has been found possible to organize serious instruction from the scattered contributions of outside lecturers. Although there is a tendency for these composite lecture courses to be transformed into courses in which the instruction is given by a resident teacher who has been trained for the purpose, it has been found desirable to keep a number of outside lecturers in order to hold the instruction of the school more closely in touch with the problems and the spirit of business.

Although some instruction in the school is given by means of formal lectures, the problem method of instruction is chiefly employed and in all courses this method is emphasized. Specific problems in the administration of typical business establishments, both large and small, form the basis for classroom discussion of fundamental principles. Written reports on analogous problems are frequently prepared by the students. This discussion of actual problems is especially valuable in developing that analytical habit of mind which is so essential in business administration.

From the time when the students enter the school they are brought into close contact with actual business problems by observing the methods used in shop, factory, and office. Over 100 business concerns in Cambridge, Boston, and neighboring cities permit students to carry on, under the guidance of an instructor in the school, intensive studies of the methods and problems of their factories, countingrooms, and stores. In several courses, notably factory management and business policy, the preparation of reports based upon personal observation and study in these places of business constitutes an especially important part of the work.

During the summer vacation of four months at the end of the first year in the school students are expected to secure employment in the branch of business for which they are preparing. In the absence of special circumstances this is a requirement which is strictly observed. The practical experience thus gained is valuable for several reasons: students may thus serve before their graduation a portion of their inevitable and essential period of apprenticeship; they obtain valuable education, through their contact with men at work, which is of especial aid in developing managing ability; through experience with the conditions in their profession, moreover, they may possibly choose more definitely the direction of their specialized work during the second year in the school. Permanent records are kept of the reports returned by employers regarding the quality of the work performed by students during their summer employment, and these records are filed with the marks received in the school.

Each student who is a candidate for the degree is required to submit a graduation thesis in his second year, which deals with some concrete problem in the business which he plans to enter and which embodies the results and conclusions derived from his original investigation of actual business conditions.

One of the greatest difficulties which has been encountered in developing the formal instruction in the school has been the dearth of formulated information concerning several of the subjects which are given a prominent place in the program of study. This dearth has been relieved in part through the cooperation of outside lecturers, in part through individual research by members of the staff and by students, and also in part through the work of the bureau of business research. The bureau was established in 1911 as an agency for the systematic study of business methods and problems, in order to gather facts about business for the purposes of instruction. Up to the present time the bureau has confined its activities to the field of marketing and within that field it has concerned itself chiefly with the marketing of shoes and groceries.

The study of the retail shoe trade was the first to be undertaken by the bureau. The general plan has been to gather as much information as possible from shoe retailers regarding the expenses of store operation and also regarding the best trade practices in buying, selling, stock handling, and accounting. The bureau soon discovered that many shoe retailers had no accounting system at all and that amongst those who did have some sort of an accounting system there was no uniformity of practice; terms were confused and important items of expense were frequently overlooked. Consequently the bureau found it necessary to prepare an accounting system which would provide a uniform basis for collecting statistics and which would also be suited to the practical needs of the average shoe retailer. The Harvard system of accounts for shoe retailers was drawn up to meet these requirements and now it has been so widely adopted that it has become the standard for the trade. Upon this accounting system as a basis the bureau has obtained detailed figures and other specific information from over 800 shoe retailers in all parts of the United States and Canada. Some of the results of this research have already been published.

In the summer of 1914 a study of the retail grocery trade was begun, following the same general plan as the shoe research. In the preparation of a uniform accounting system for this trade, the Harvard system of accounts for retail grocers, it was found that only a few minor modifications were necessary to adjust the shoe accounting system to the needs of the retail grocery trade. The same system, it may be noted, appears to be applicable to at least several other kinds of retail business. Since the grocery research was started the bureau has obtained detailed information from over 500 retail grocers in all parts of the United States. The first results of the investigation were published in a bulletin of the bureau, November, 1915.

At present the bureau is preparing a uniform accounting system for shoe wholesalers, in cooperation with a special committee of the National Association of Shoe Wholesalers, and the collection of information on the wholesale shoe trade has already been begun. The preliminary steps are also being taken toward the drafting of a uniform accounting system for wholesale grocers and a study of the wholesale grocery trade on a country-wide scale. The work of the bureau will be extended to other branches of business as fast as its resources permit. The results of this research, which incidentally have been warmly received by business men, are invaluable for the purposes of thoroughgoing education for business.

In conclusion it is to be pointed out that the Harvard graduate school of business administration stands for the training of business executives demanded by the growing complexity of modern business. It is not to be supposed that the work of the school can be substituted for actual business experience. The graduate of the school fully realizes that he must begin in a subordinate position. His schooling, however, prepares him to fit readily into the complex mechanism of business life, and because he has acquired some insight into the relation of his individual task to the whole organization of which he is a part, he is interested in the routine duties which engross the earlier years of business life. His occupation has a professional interest to him. To develop this professional spirit among business men is a task of the highest importance, which places a grave responsibility upon our schools which provide education for business.

Mr. SNIDER. I was very much interested in the paper read by President Campbell, of the University of Oregon. I should like to know something about the cost of such service given in that State, the cost of this commercial and industrial bureau, which makes these world-wide surveys.

Mr. CAMPBELL. Owing to the financial exigencies of the university, the cost has necessarily been very low. The work has been carried

on through an office in Portland, in connection with the Chamber of Commerce of Portland, and by the utilization of the consular service. The Government has helped us some in the matter of franking. I should say the budget of this bureau of commercial and industrial service has not been in excess of \$1,500 or \$2,000 during the past year. That includes the office charges, such as stenographer, clerk, and office rent. It does not include the salary of the director of the school of commerce.

Our organization is a little unusual. We have a director and also a dean. The reason for this is that the university is located at Eugene, 120 miles south of Portland, whereas this special bureau is located in Portland, and the director of the school, Mr. Miller, who was for many years in the consular service and knows the oriental market very intimately, does this work as a labor of love, very largely.

Mr. SNIDER. May I ask another question? As a result, we will say, of your investigation in the market for boxes, and the replies from consuls, did the business men make any response and take any action? Did they expand their trade?

Mr. CAMPBELL. Oh, yes.

Mr. SNIDER. To what extent?

Mr. CAMPBELL. I can not tell you, but Mr. Miller has told me that there has been considerable utilization of what was formerly waste products. You see the box has the advantage of being set up in small pieces, and the parts that are otherwise unavailable may be utilized. Mr. Miller tells me there has been much utilization of this otherwise waste material within the six months, we will say, since the information was collected.

I should like to make another point. We have in our organization in Oregon the two State schools, the agricultural college, and the university. The agricultural college is going very extensively into the production side. The university limits itself to the market side. We are looking wholly to questions of world marketing and matters of transportation. For example, we can grow potatoes in Oregon very well, but in Idaho and Montana they grow them much more easily than we do. They have a differential in freights, and the result is that the potato producer allows his potatoes to rot in the ground in Oregon. He does not understand the market. That is the real problem now, and the university devotes itself only to the market side.

Mr. McBRIAN. What is the reason that the potatoes rot in the ground?

Mr. CAMPBELL. The freight differential is in favor of the Montana and Idaho producer and is so great that it does not pay him to dig his potatoes. That is the trouble. He lets them rot in the ground, crop after crop. You see, the farmers follow one another. They rush

into something and break the market, and then they get out of it and rush into something else. They all go together. The Government should do the same as Germany has done, indicate what the market demands are, and then indicate the sections that are best fitted for transportation and the amount that should be produced. It should try to have them produce that amount, and then ask the rest to stay out. We have been trying to do something similar in our State, so as not to break the market. Oregon, for example, produces a great many fruits, and although it grows a great many apples, the farmers can not get enough out of them. They should confine themselves to producing prunes, so as to reach the world markets. We are trying to bring this question directly before the producer, on the market end, and it is with the market end that we are concerned.

Mr. MCBRIAN. If the farmers can not sell at a profit, do you find that they do not have enough for their own homes?

Mr. CAMPBELL. No, sir; that is not true. There is always the small farming, the diversified farming. That means that every farmer grows a little for his own use, and there is a superabundance that goes into the market anyway, so usually the home markets do not suffer from that.

The CHAIRMAN. May I ask whether the trouble with the apple production of the Alanta Valley is in the matter of freight rates?

Mr. CAMPBELL. It is very largely so. Another difficulty is that the Alanta Valley apple does not keep so well for shipping. The apple of eastern Oregon, which is produced in a cold climate, keeps much better. The Alanta Valley is a more moist climate, and the apples are not so good for shipping, for that reason.

The CHAIRMAN. Are there any further questions? These are interesting matters. In the schools and colleges of commerce we are ultimately involved not only with the instructional side, but with the research side as well.

Mr. CAMPBELL. May I say that the intention there, after all, is largely to bring the students in contact with this work all of the time.

The CHAIRMAN. I have been very deeply interested in the work done in Cincinnati in connection with the business there. I want to ask if you have any difficulty in securing the connection of business firms. Are the students, in the large numbers that you have, quite easily placed in the business world? As I stated, our effort to arrange a systematic connection with business men is of one year's duration thus far, and we have had fair success; in fact, very encouraging success. We do not undertake, in our college of commerce, to place men. You perhaps know of our college of engineering?

Mr. CAMPBELL. Yes.

The CHAIRMAN. Of our cooperative engineering course, in which there is a definite relation existing between the college of engineering and many of the firms there, whereby the firms agree to take a certain number each year? Of course, in that case the personnel of these factories is changing from year to year, so that they have less difficulty in making new places than would the commercial house, where their employees do not change to such an extent, but I may say that in the college of engineering they have more places available than the university can provide students for. We are limited in our capacity there; that is, in our buildings, and our teaching staff, and so on. The limitations there are rather on the side of the university than on the side of business.

Mr. SNIDER. Mr. Chairman, Mr. Stanley Rose, special agent of the Department of Commerce, is present, and he thinks that the Department of Commerce is just as anxious to make connections with the schools of commerce as are the schools of commerce with the Department of Commerce. He has a few remarks that he desires to make.

The CHAIRMAN. We shall be very glad to hear him.

Mr. ROSE. Mr. Chairman, I was lately designated by the Chief of the Bureau of Foreign and Domestic Commerce to make a trip through the entire country. One of the objects is to bring together the schools of commerce, our department, and the chambers of commerce.

It seems to me that it is highly urgent that we bring up to date our textbooks on commercial geography, commercial history, and foreign trade technicalities in general. I think it is conceded that almost every textbook that is published is absolutely out of date after a week or so, because such data is constantly changing, and I would like to see the universities and schools of commerce of the entire country utilize the daily Commerce Reports of the Department of Commerce as a continuous daily textbook. The way that I think it can be done is this. You are doubtless all familiar with this publication. In each daily report there are small articles about foreign trade, mostly consular reports, which are cut down somewhat so as not to make them take up too much room, and they deal with everything that a commerce student is liable to have to know. Could these not be made a daily textbook to treat of the different articles which are of interest, and those daily textbooks, could they not be used as a class text, and be discussed, thereby bringing the students into immediate touch with daily foreign trade problems? Not only that, but it would make discussion much more interesting, as there will be questions of foreign trade that are taking place right at the present time, and not dry matter, which I think it will be conceded will be found among the pages of every published textbook.

The Department of Commerce is anxious to furnish bureau publications as they come out to libraries of the schools of commerce of the country. We shall be very glad to give our prompt attention to the requests of universities or schools which send in for such publications.

Mr. CAMPBELL. The difficulty which you suggest is a very real one. We are utilizing in a broad way the paper or book sent out by the University of Wisconsin, and we are also using the books of the Alexander Hamilton Institute.

Mr. ROSE. Of course, they are more or less theoretical.

Mr. CAMPBELL. Speaking of commercial geography particularly, our difficulty was so great that we placed the course in the hands of the head of the department of geology, not on account of the subject, but for the reason that he had been around the world some three or four times himself, and was for eight years director of the bureau at Manila, in the Philippines, and was quite familiar with the Orient. He has been utilizing these reports and similar material, and practically making his own textbooks. He is a practical man, who knows the markets of these countries. I should say the suggestion would be practical, but no doubt it would need, of course, the services of a teacher who is himself pretty familiar with world conditions, but that ought to be assumed anyway, I presume.

The CHAIRMAN. Dr. Snider, will you comment on that subject also?

Mr. SNIDER. I have, of course, used the Department of Commerce daily reports considerably in my work in foreign trade, but I have found it was necessary for class use to clip from those reports and have the material mimeographed. I do not know but what Mr. Rose's suggestion is a very good one, and I think I shall try the plan, for the next four or five months, of having the students do the clipping, as we go along.

Mr. ROSE. I would like to suggest to Dr. Snider that the students keep what we call a collation file. I have often recommended when speaking before schools of commerce throughout the country that by using these commerce reports, cutting them up (and they are very cheap, they only cost \$2.50 a year) and by collating them, and getting the students to keep separate envelopes for all the different countries, or for different commodities in which their particular interest lies, and by letting them put all reports from each country in a separate envelope, then when any discussion comes up on a particular country or subject the student will have these facts already collated, and will at a glance be able to look over all he has on the subject. That will be only one way, but I have found that usually is very helpful. I would like to offer that suggestion to the chairman.

The CHAIRMAN. We will be glad to hear from any others on that topic. I am confident that any assistance that can be rendered in

this matter of supplying colleges of commerce with material will be not only much appreciated, but a great service will be rendered. No person who has started out to build courses in commerce, with the idea of making them useful and making them actually tie up with things, has failed to appreciate the tremendous problem before him, and it is not because the information has not been collected, but because it has not become available to us.

Now, the suggestion that has been made seems to be a very worth while one. It might be desirable in that connection to develop in the students the habit of keeping a card catalogue, if they do not wish to cut these things out. Of course, it would be necessary to have the material organized so that we could present the subject somewhat systematically.

Mr. MACCLINTOCK. I shall be very glad indeed to learn from Mr. Rose, with whom I have had the pleasure of some correspondence, what replies he has obtained from the manufacturers and other business men with whom he has been in contact, as to what they want from the colleges and the private institutions that are engaged in supplying information and training of this character.

Mr. ROSE. What they want, or what they have not been able to get?

Mr. MACCLINTOCK. Take both propositions.

Mr. ROSE. They usually want a lot, but I have found that the manufacturers throughout the country have pointed with some pride to their particular commercial school, especially in some of the cities I have visited. The main complaint they almost all made is that some of the teaching appeared to be a little bit too theoretical and not practical enough, especially in regard to languages. I mentioned that yesterday, when the foreign language question came up, and I brought out the point that the teaching of the languages, not only in the universities, but in some of the high schools and business colleges of the country, needed a little more practical turn. I think that is about the only criticism on that matter that I have heard. For instance, a man will come to a firm as an expert clerk or stenographer, and he will say that he understands Spanish. He has taken up, we will say, a two-years' course in the school of commerce, and he is able to a certain extent to translate a Spanish textbook, and sometimes, but more rarely, he is able to translate an English book into Spanish, but he is absolutely unable very often to translate a Spanish business letter into English, or an English business letter into Spanish. The student often does not know that idioms play a tremendous part in a foreign language, and he is even more incapable of conversing in the simplest form in that particular language. That, I think, wants to be looked into further. But I think, otherwise, the commercial colleges throughout the country are doing won-

ders, are waking up, and they are taking up subjects in a much more energetic way than they have been.

My trip throughout the country was really meant to confer with groups of manufacturers, and I would talk to them on the work of the bureau and our problems. Then, in one or two cities I had meetings of commerce classes of universities; for instance, in St. Louis and in Columbus, Ohio, and I always went to those meetings of commerce classes extra well prepared, because I knew it was like going through another Commerce Department or civil-service examination. The young men in those commerce classes asked questions which were fit for any big manufacturer to ask. They showed a practical drilling, and it was a pleasure to answer questions like that. In Columbus, Ohio, they kept me for two hours answering questions, and every question had some point to it, so I think the universities are doing excellent work that way. That is another reason we want to do everything we can to help them. I do not know whether that answers the question of Prof. MacClintock or not.

Mr. MACCLINTOCK. Yes, I think so. Do you not find that business men generally feel that the universities are not supplying what is required in order to give proper training to young men who go into their employ?

Mr. ROSE. No, I do not think so. I think the business men are recognizing the wonderful work the university is doing and are working in conjunction now with the different universities, because they know the university can not supply actual, practical work. The National City Bank of New York, the Standard Oil Co., the United States Steel Products Co., and others have formed practical commerce classes.

We, in our branch office in New York, are now having one or two young men working on half time in the mornings in the bureau, and in the afternoons they work at the New York University. The City College of New York is also conducting these half courses, and I think the universities are finding that the thing to do is to lay a little more stress on the practical side of commercial education. It is also up to the manufacturer, in my opinion, in the respective cities to help by giving to commercial classes the practical advantage of visiting them, answering questions, and putting them in touch with the practical work of the day.

Mr. SNIDER. I do not know whether it is the function of this section to do what I am going to propose or not but I think it will answer Mr. MacClintock's question. It is a question which I think every man who is engaged in commerce work is asking; e. g., what does the business man want? I have been asking business men for five or six years, who have been interested in foreign trade, what they wanted their men to know who came to them from colleges of

commerce, and I have not yet felt that they have fully answered my questions, but I know that there are a great many men all through the country who would like to know what these men are saying.

Now, the National Foreign Trade Council last year, about a year ago, started an investigation and sent out a questionnaire to several thousand manufacturers all over the country, in which they put questions to them in regard to commercial training, especially bearing upon foreign trade. They were also trying to find out what the manufacturer wanted his men to know. That material lies idle in the secretary's office of the National Foreign Trade Council. We have had papers here which were based upon that material, from Prof. Jenks and Prof. Gay, both on the educational committee of the National Foreign Trade Council, but it seems to me that we do not want our material secondhand, although they are admirable papers as they are. We would like to find out from the manufacturer himself just what he thinks he wants, so I would suggest that if it is the function, or comes within the functions of this section, that we pass a resolution asking the Foreign Trade Council, for the benefit of commercial schools, if they will publish their returns as returns, and not as a digested report. I make that as a motion.

Mr. CAMPBELL. I second that motion.

The CHAIRMAN. Whether it is our function or not, I think it is well for us to assume that it is. Are there any remarks on that motion? If not, all in favor will say aye.

The motion was unanimously agreed to.

The CHAIRMAN. The motion is carried, and although we have no specific means here for the purpose, I will see that the motion reaches its destination.

Mr. MCBRIEN. Mr. Chairman, I wish to ask a question for information. I was wondering whether, in getting this material before the proper persons, it would be possible for the Department of Commerce to get out an official bulletin?

Mr. ROSE. May I ask on what matters—on the university?

Mr. MCBRIEN. On what the business men want their men to know. As some one said, he has been asking that for five years.

Mr. ROSE. Oh, I feel quite sure that if this matter were put in some way up to the bureau, it would be very glad to do so, either by bulletin or by press notice. I can not answer that. It will have to go to the chief of the bureau, Dr. Pratt. It is similar to the kind of thing that we are doing all the time. The Department of Commerce, I might say, is willing to cooperate in all these matters as fully as possible, provided it is within their sphere.

The CHAIRMAN. I suppose the functions of the Department of Commerce and the Bureau of Education might overlap slightly, but I do not imagine there will be any trouble on that score. Speaking for myself, and I believe the others will hold a similar opinion, I should appreciate very much indeed if the bureau had in charge the collating of the opinions and views of business men.

Mr. ROSE. I think it would be wise to put that inquiry in the proper way to the Chief of the Bureau of the Department of Commerce in order to get satisfactory results. I think that would be the better way to do it.

The CHAIRMAN. Would it help if a resolution to that effect were adopted?

Mr. ROSE. I do not think it would hurt.

Mr. CAMPBELL. I should be very glad to move the adoption of such a resolution.

Mr. SNIDER. I second the motion.

The CHAIRMAN. It is moved and seconded that the Bureau of Foreign and Domestic Commerce be requested to secure for the benefit of the institutions teaching higher commercial subjects, the views of business men as to what they would like to have such institutions do. I think that puts it correctly, does it not?

Mr. MACCLINTOCK. Mr. Chairman, before the motion is put, might I raise the question whether it would not be possible to broaden that questionnaire a little bit? Why not make it embrace two things: First, what the educational institutions are themselves doing; and, in the second place, what the business men would like the educational institutions to do. In other words, are not those two things of equal importance? I am quite sure that there are a good many business men in the community who do not have a proper appreciation at all as to what the educational institutions, both public and private, are doing in the way of supplying commercial education, and it seems to me that this inquiry might consequently be broadened to make a little digest or a little statement in regard to what is actually being done by the educational institutions at the present time, and what the business men would like to have these institutions do.

Mr. CAMPBELL. I will be glad to adopt that as a part of the motion.

The CHAIRMAN. The motion, then, will be so broadened. All in favor of it will say aye.

The motion was unanimously agreed to.

The CHAIRMAN. That motion is carried. Is there anything further for the program this morning? If there is nothing further, we will stand adjourned until 2.30 this afternoon.

Adjournment.

SESSION OF SUBSECTION 10 OF SECTION IV.¹

PAN AMERICAN UNION,
Tuesday morning, January 4, 1916.

Chairman, ROGER W. BABSON.

Session called to order at 9.30 o'clock by the chairman.

Papers presented:

Special Courses for Commercial Study; Statement as to Aims and Achievements since Establishment:

Correspondence Schools, by T. J. Foster.

A scientific method of employing office help, by Sherwin Cody.

University extension work for men in business, by Samuel MacClintock.

Alexander Hamilton Institute, by Joseph French Johnson.

National Association of Corporation Schools, by Lee Galloway.

The Commercial Museum, by W. P. Wilson.

The National City Bank, by F. C. Schwedtman.

Bureau of Commercial Economics, by Francis Holley.

PREPARATION FOR BUSINESS, DOMESTIC AND FOREIGN, IN THE CORRESPONDENCE SCHOOL.

By T. J. FOSTER,

Scranton, Pa.

The history of instruction by correspondence, so far, at least, as the modern application is concerned, is also the history of the International Correspondence Schools, and because of this I trust that you will pardon what may seem a quite frequent reference to the schools.

The International Correspondence Schools had their birth in a humanitarian impulse. In the early eighties there was published at Shenandoah, Pa., in the anthracite coal regions a weekly newspaper, *The Mining Herald*. The interests and efforts of the editor were absorbed in the welfare of the mine workers. He was appalled by the great number of fatal accidents among them. He studied conditions and determined what he believed to be the cause—ignorance on the part of the miners, foremen, and superintendents of the science of their work. A department of the paper was then opened devoted to questions and answers relative to coal mining for the benefit of the readers. This innovation was met by a flood of questions, the chord of a long unsatisfied desire had been touched. It was soon found that the miners all about, men of all ages, the thought of the schoolroom long ago thrust from their minds, were yet hungry for a better understanding of the work beneath their hands. The next

¹ There was no stenographic report of this session

step was to go beyond the bounds of conventional educational methods and with the help of competent engineers prepare a course in coal mining which anyone able to read English could study at home, sending his written recitations to the school by mail.

Within six months after the enrollment of the first student, October 16, 1891, a thousand men were studying the mining course by mail. From this beginning has been developed the present system of correspondence instruction. Created to teach a single subject the schools now give instruction in 280 courses, covering almost every branch of technical education and dozens of other subjects ranging from advertising and salesmanship to poultry husbandry and agriculture. These courses include 62,000 pages of text and 31,000 illustrations and cost \$2,500,000 to prepare. To conduct the work requires the hands and brains of more than 4,000 employees in America alone and hundreds in other countries of the world. They have enrolled more than 1,750,000 persons, representing every occupation in the realm of industry and every country on the globe. And approximately 100,000 new students are being enrolled each year. It is almost impossible to conceive what it means for a single institution to have such a tremendous student body. There is no precedent for it in history. Some idea of the scope of the enrollment may be obtained from a glance at the following enrollment figures:

Advertising.....	30, 003	Lettering and sign painting	39, 739
Architecture.....	102, 337	Locomotive running.....	80, 075
Arts and crafts.....	68, 821	Mathematics.....	9, 530
Chemistry.....	24, 983	Mechanical engineering.....	125, 317
Civil engineering.....	84, 706	Mining.....	47, 759
Civil service.....	58, 557	Navigation.....	4, 447
Commerce.....	221, 818	Pedagogy.....	9, 410
Drawing.....	153, 392	Plumbing, heating, and ventilat-	
Electrical engineering.....	233, 918	ing.....	36, 198
English branches.....	53, 721	Steam engineering.....	135, 866
Languages.....	33; 490	Textiles.....	12, 670
Commercial law.....	8, 128	Window trimming.....	4, 670

The schools have enrolled in 25 years six times as many students as Harvard College has enrolled in three centuries; ten times as many as Yale has taught since her doors swung open in 1701; five times as many as are in attendance to-day at all the colleges, universities, and technical schools in the United States.

Correspondence instruction is successful because its system of teaching is designed wholly for this field. The foundation of the system is its textbooks. To successfully teach by correspondence requires an entirely different kind of textbook than that used for classroom work. Books that need a teacher to explain and elaborate them are worthless to the student who must study at home or at his workbench or by the flare of a miner's lamp. So such textbooks must be created. They must take nothing for granted, save the ability to read. They must begin at the beginning and proceed by easy stages, leading the student forward by natural and carefully graded steps. They must foresee and meet his difficulties by full explanations, demonstrations, and illustrations. All irrelevant matter must be eliminated, and only such matter presented as bears directly upon and is essential to a mastery of the subject. Such books cost more money to prepare than any other textbooks ever published. For example, the following courses and costs:

Mechanical engineering.....	\$230, 000	Mining.....	\$128, 000
Electrical engineering.....	174, 000	Textiles.....	76, 000
Architecture.....	159, 000	Commercial.....	66, 000

Books of this class, prepared for correspondence instruction, have been recognized by resident schools to the extent that they are used in classroom work and for refer-

ence purposes by 218 universities, colleges, Government schools, institutes of technology and vocational schools in America, by the United States Navy Department in its shipboard training schools, and by many of the largest industrial corporations in their training classes for apprentices and employees.

It is obvious, of course, that an essential to successful home study, like any other method of study, depends upon a sustained interest on the part of the student. Some students are by nature sufficiently ambitious to pursue their studies diligently of their own volition. But correspondence schools recognize that many students—probably a majority—need stimulus of outside encouragement to keep them at their lessons and for this purpose an encouragement department is maintained. This department watches with a genuine personal interest the progress of every student. If he is delinquent in sending in his lessons, if he is discouraged, if there is the least indication of a slacking of his interest, this department encourages, enthuses, helps, and urges him on to the attainment of his original purposes. Last year the encouragement department of one school sent 1,110,204 letters of inspiration to students. As a result of this work, students to-day are doing 56 per cent more studying than in 1906. In 1914 the students of this school sent in for examination 1,141,430 lessons. The London instruction department handled in one year 358,000 lessons.

Now, what of the value to the student of this educational system? There is the testimony of the students themselves. There are on file thousands upon thousands of enthusiastic letters from students, telling of their advancement from unskilled drudgery to well-paid positions of trust and responsibility. In one school each month between four and five hundred students write to tell of advancements which their training has brought them.

Recently, to obtain specific information regarding men who have achieved success through correspondence courses, an investigation was made of the cases of 27,000 typical students in a few Eastern States. At the time they enrolled the great majority of them were engaged in unskilled occupations, in which they would have been compelled to remain indefinitely had not correspondence instruction brought them the opportunity to study and prepare for something better while they worked. Among the cases investigated two students were found who now have incomes of \$50,000 a year, 6 who have incomes of \$25,000 or over, and 20 who receive \$10,000 per year or better. Out of all these 27,000 students 14,990, or 54.2 per cent, are receiving \$1,500 a year; 2,451, or 9 per cent, are receiving at least \$2,500 a year; and 413, or 1.6 per cent, have annual incomes of \$5,000 or more.

Another department of this school has on file over 30,000 letters from students expressing gratitude for what correspondence instruction has done for them. In order to get virtually a "cross-section" view of these testimonials, 1,000 letters were drawn from the files. The first interesting feature revealed was the occupations in which the 1,000 students were engaged at the time they enrolled, nearly every one some kind of unskilled labor. For example, 139 were bricklayers, 65 miners, 62 laborers, 62 clerks, 39 foremen, 35 apprentices, 29 farmers, 23 firemen, 19 helpers, and 11 factory workers.

At the time they reported their progress the same men were distributed through 55 professions and occupations. The greater proportion has attained positions demanding executive and constructive ability. No less than 696 out of the 1,000 had become superintendents, proprietors, managers, general managers, contractors, or architects. It is of no less importance that in practically every case the advancement in position carried with it a proportionate increase in salary. At the time these 1,000 students took up their courses their average wage was \$53.90 per month. At the time they wrote their letters of appreciation their average income was \$182.48 per month. This was an increase in earning power of \$128.58 per month, or 239 per cent. These students paid on the average less than \$60 for their course. In other words, the increased earnings of a single month reimburses each student more than twice over for the

entire cost of his education. No other system of education could possibly provide such benefits at so small a cost.

The time has passed when orthodox educationalists can afford to look upon correspondence instruction with disdain. Great Britain has demonstrated, in the work of the London University Correspondence College, what good can be accomplished through the mails. Some of our best American colleges and universities have frankly admitted and adopted the method. Among formal educational institutions, Chicago University, under President Harper, may be called the pioneer.

Chicago University offers 52 courses by correspondence. The Universities of Minnesota, Wisconsin, Nebraska, West Virginia, and several others have adopted the method and are achieving some satisfactory results.

The weakness of the work done by these institutions is their lack of properly prepared textbooks, the books they use being the ordinary classroom texts, which are not adapted to home study. Such books involve the presence of a teacher able to give verbal explanation of difficulties and processes. They are usually written to aid the teacher in teaching rather than the student in studying. Textbooks for home study have several unique features.

1. The textbooks must be written from the standpoint of the student who must study alone.

2. The textbooks must take no preliminary knowledge for granted; each subject must begin with the most elementary material and the student must not be allowed to go forward until he has thoroughly mastered the preceding lesson.

3. Every subject must be divided into small units in order that the student shall not be overwhelmed with the magnitude of his task.

4. The textbooks must be under constant revision. Home-study books should be the nearest up to date of any published.

5. The textbooks must be simple and practical. They must contain only the facts, principles, processes, and applications of the subject under study. For example, they need not occupy the student with the derivation of formulas, but must teach him what formulas mean and how to apply them. All speculative questions must be omitted; matter that is of mere historical interest must be eliminated.

6. The textbooks must be copiously and accurately illustrated by the most perfect process known in the printing world. Wherever it is possible the student must be aided by diagram, sketch, photograph, or colored plate.

By the correspondence system a student may study as and when he will. The correspondence student often gets experience as he studies—makes daily application of what he learns. The student does not have to leave home to get an education; the education comes to him. The instruction is private, each student is a class to himself; gets all the instruction; does all the reciting. How much studying will students do under these conditions? In 1914 one correspondence school received 924,056 written lesson papers, 208,230 drawing plates, and 9,144 language phonograph records, a total of 1,141,430 pieces of work. Just think for a moment what that means toward preparation for business.

From an investigation of the records of several hundred correspondence students it has been found that the average time required to complete an engineering course is 3 years and 2.9 months, or 38.9 months. If it be assumed that these students kept on with their studies without the vacation periods enjoyed by college students, their time for finishing their course slightly exceeds that required to obtain a college diploma because the vacation periods reduce the college year to 8½ months, or 34 weeks. The student in college may put in more hours per day at his studies than does the correspondence school student, but much of this time is spent on general science and other matters not closely related to his course in engineering. We shall not be much astray therefore in saying that to obtain a correspondence school diploma in engineering

requires about as many hours of study specialized on engineering science proper as to obtain a college diploma in engineering.

The amount of work done by a correspondence student in completing his course furnishes him a training in accurate expression that goes far to make him a well-educated man in his specialty. A correspondence student's written work compares favorably with the amount of writing in the examinations of a four-year college course. In the average college course there are three terms a year, or 12 terms in all, with examinations at the close of the term in the three or four subjects studied. In these 48 examinations the student will write an average of perhaps 10 pages for each examination, or 480 pages of written matter in the four years' examinations. Counting the number of words written at 250 a page, the college student, during the examinations of his four-year term, will write about 120,000 words.

The experience of several correspondence students in their courses of study furnishes interesting data. It demonstrates the magnitude of the undertaking when a student begins a regular correspondence course of study.

One student was a bookkeeper in a small Pennsylvania town who began his complete coal mining course at the age of 38, long after it would have been possible for him to attend a resident college. In his course of study every problem and every word were directly specialized on coal mining operations, and in the period of time while he was studying it is safe to say that he studied as many pages of technical matter directly applicable to coal mining as he would have studied in almost any resident course that he could have taken up. His lessons took him through 4,157 pages, illustrated by 2,506 accurate pictures of coal mining operations. He mastered the subject matter of the text at least as thoroughly as though he had studied the same matter at college, because instead of answering only a few questions relating to coal mining, with a passing mark of 60 to 70 per cent, he was obliged to give an answer to every question and attain a passing mark of 90 per cent. Instead of examinations in perhaps 48 subjects he was obliged to pass examinations in 79 different instruction papers. In the course of these examinations he wrote out answers to 1,921 questions, with an average of 51 words in each answer, or a total of about 99,000 words. In addition to this he drew a large number of diagrams to illustrate his answer, and as training in drawing and mapping he carefully drew in ink 12 drawing plates, which alone would take at least three months.

One correspondence school graduates an average of 50 students a week—2,600 a year. The following list shows a liberal estimate of the number of graduates per year from 25 colleges, universities, and technical schools. The estimate is based upon the fact that an average of one-eighth of the total enrollment of American colleges and universities graduate every year.

	Number of graduates.		Number of graduates.
Columbia University.....	736	Rensselaer School of Technology..	162
Cornell University.....	607	Case School of Applied Science...	120
Harvard	646	University of Michigan.....	653
Yale.....	410	Johns Hopkins University.....	89
University of Pennsylvania.....	600	Stevens Institute of Technology...	98
University of Minnesota.....	633	Armour Institute of Technology..	403
University of Chicago.....	707	University of Wisconsin.....	563
Lehigh University.....	86	Tufts College.....	140
University of Syracuse.....	406	Worcester Polytechnic Institute...	128
University of California.....	431	Brooklyn Polytechnic Institute...	130
University of Illinois.....	621	Dartmouth College.....	149
Williams College.....	68	Clarkson School of Technology....	21
Massachusetts Institute of Technology.....	365	Total.....	8,972

The graduates of one correspondence school annually exceed in number the graduates of Cornell, Columbia, Harvard, and Yale together; they are double the number of graduates of the Massachusetts Institute of Technology, Rensselaer School of Technology, Case School of Applied Science, Stevens Institute of Technology, Armour Institute, Clarkson School of Technology, and Brooklyn Polytechnic, and they amount to almost one-third of the total number of graduates of all the 25 colleges, universities, and technical schools in the list.

It should be noted that there is a considerable difference between the number of correspondence school graduates and the number of correspondence students qualifying for better conditions of employment. This is due to many causes.

Thousands of students enroll for courses consisting of numerous sections (such as a civil engineering course, embracing surveying and mapping and railroad, bridge, and municipal engineering), any one section of which qualifies one for definite employment. Upon finishing a section of such a course a great many students are fitted for work sufficiently remunerative to justify them in giving up their studies, at least temporarily. As an illustration, consider the following:

"In taking up the civil engineering course I began with surveying and mapping. Soon afterwards I secured a temporary job with a surveying party where I earned \$40 a month, which position I was able to fill with comparative ease. Lately I went out with a surveying corps and make \$70 a month. This seems pretty good for a boy of 19. My actual studies have taken up barely a year.

"AUGUST FALKENBURG,
"511 Friendship Lane, Baltimore, Md."

Correspondence students, as a rule, are busy men, working long hours and having little time to write out and submit lessons for correction. Many students, therefore, to save the time consumed in writing out and submitting lessons, pursue their studies from the bound volumes of their courses. They can do this because the volumes contain all the instruction papers of the various courses arranged and indexed with special view to their utility for home study and reference purposes. Indeed, the simplicity and practicability of the volumes are such as to give a reader the impression that he is listening to the discourses of a trained instructor explaining in clear, simple language all the facts, principles, and processes of a profession. The following letter is from one of thousands of students who pursue most of their studies from the bound volumes:

"But for the instruction received from you I could never have developed the perfectly working combination of mechanical ideas involved in my invention of the Jackson magic molding machine for the molding of concrete blocks. The patent, No. 776,137, was issued on the machine in November, 1905. My earnings at the time I enrolled with you amounted to about \$1.50 a day, as I was then employed by the Bodley Wagon Co., of Staunton, Va. I am now a member of the Jackson & Lacy Molding Machine Co. As my income depends on the amount of business our company does, I can not estimate it accurately; but, of course, it is many times what I earned before.

"As you know, I sent in recitations on only a part of my course, doing most of my studying from the drawing plates and reference library furnished with my course.

"It will always be a pleasure to recommend your methods, as I attribute my success to the instruction received.

J. W. JACKSON,
1400 W. Broad Street, Richmond, Va.

During the fiscal year of 1914, 5,210 students at this school voluntarily reported improvement in their working conditions or increases in salaries, or both. It is conservative to say that at least twice as many more, without reporting to us, qualified through this training for better-paying positions. Thus a total of approximately

15,600 students during a single year became better citizens, improved their efficiency as workers, and increased their earnings.

Experience and education are the handmaids of efficiency. One without the other is of little value. A school offering the advantages of practical experience and technical training at the same time has a distinct advantage over the institution that has only mental training to offer. The following letter, written by Mr. E. W. Liljegren, a veteran engineer of Spokane, Wash., bears this out:

"To every young man I would give the advice I gave a friend who asked me if he ought to send his son to college first and give him practical experience afterwards, or give him the practical part first. I replied: 'Give him both at once. Let him work in your mine and enroll in the correspondence schools. In this way he will secure both technical and practical education, and at the same time be earning good wages. If he goes to college, it will require twice the time and will cost him from \$2,000 to \$5,000, and he will be getting no experience. In the correspondence school his course will cost him under \$100.' I am pleased to say that my friend took my advice."

Only where a combination of practical experience and education are effected are the best results produced by the technical worker. Because this is true the average college graduate is of little value in the technical professions for several years after graduation. In contrast the correspondence student in addition to learning theory is acquiring practical experience. The following is an illustration of the manner in which a student enters the field of civil engineering and advances successively through the various phases of the work.

"Some time after enrolling in your school of civil engineering I requested you to assist me in securing a position with Mr. M. L. Byers, of the Baltimore & Ohio Railroad. He gave me a personal examination, examined your books, and after careful consideration informed me that I was fully equipped for a position in the engineering department. I secured a position, starting as rodman, and was later promoted to transitman. Then I became engineer of a corps at \$100 per month. Now I am engineer and superintendent of construction in Baltimore at \$200 per month. I find, with my personal experience and the education and training I have received from your schools that I am able to cope with college graduates and handle the work with success.

"W. J. WIRE,

"239 E. Fairview Avenue, Connellsville, Pa."

By comparing the earnings of various classes, variously educated, it is possible to arrive accurately at the intrinsic worth of different kinds of educational training. It is proposed here to consider the earning value of primary and public school education as compared with technical education.

It has been stated that a man without education, compelled to work as a laborer, earns about \$500 annually for 44 years, or a total of \$22,000. The average period required for the American boy to pass through the primary and grammar grades of a city school and be ready for entrance to high school is about 9 years of 200 days each, a total of 1,800 days. The average earning capacity of a boy going no further than the grammar school has been placed at \$1,000 a year for 44 years, making his total life work \$44,000. So that by spending 1,800 days in the elementary schools his earning power exceeds that of the laborer by \$22,000. This gives each day in the elementary school a monetary value of \$12.22. In other words, each day spent in the elementary school increases his earnings over those of the laborer \$12.22.

If the boy from the elementary school enters the high school and finishes the usual course of 4 years, his life wage, according to what seems a conservative estimate, will be increased by an average of 50 per cent above that of the elementary-school graduate. His total life wage will amount to \$66,000, being an excess of \$22,000 over the life wage of the grammar or elementary school graduate and \$44,000 over that of the uneducated laborer.

If, now, the high-school graduate will spend 2 or 3 hours daily during each of 3 years in technical study, his income should range from \$2,000 to \$2,500 a year, and his total working period will be lengthened by more than the 3 years required to get his final technical training. If we assume that he continues to work at his profession for 44 years, earning an average income of, say, \$2,200, his life wage will be \$96,800, which is \$74,800 more than that of the uneducated laborer, \$52,800 more than that of the primary-school graduate. Since a technical course in a correspondence school requires about 3,000 hours of study or 300 10-hour days, he will receive more than \$100 for every day spent in technical study.

It follows then:

1. To complete a grammar-school course increases the life wage of the grammar-school graduate \$22,000 over the life wage of the unskilled laborer—an increase amounting to \$12.22 for each day spent in school.

2. To complete the high-school course increases the life wage of the high-school graduate \$22,000 above the life wage of the grammar-school graduate—an increase amounting to \$27.50 for each day spent in high school.

3. To complete a good technical course increases the life wage of the technically trained man by \$30,800 more than the life wage of the high-school graduate—an increase amounting to more than \$100 for each 10-hour day of study.

4. A day of technical training is worth nearly four times as much as a day of high-school training and more than eight times as much as a day in elementary grades. Therefore technical training has a higher monetary value than any other kind of education.

This shows the remarkable salary-increasing possibilities of technical education. A careful estimate has revealed the fact that technical education adds more than \$20,000,000 each year to the earnings of the students at one correspondence school; that technical training shortens the working time of these correspondence students approximately 25,000,000 hours each year.

The careers of many correspondence students read almost like fairy tales. As an illustration, I wish to outline a single one:

Among the forest-covered mountains of West Virginia, at Madison, there lived a young man named C. J. Pearson. Opportunities in Pearson's locality were few and far between. This was true to such an extent that when he had attained his majority the sum total of his earnings was a meager \$35 a month. Mr. Pearson had no money, but an abundance of time. Of an ambitious and reflective turn of mind, he pondered long and seriously on the project of turning his time into money, of so investing it as to insure the largest returns. He finally deciding that investing it in additions to his store of knowledge, by the acquirement of a special education for a definite field of employment, was the surest means of attaining his object. How to obtain an education, however, was a stumbling block. Resident instruction he could not afford, being obliged to support himself through his own exertions, and he dared not surrender his position, however humble. In a moment of good fortune his attention was called to correspondence instruction. Quick to see his opportunity, he enrolled for a course in surveying and mapping. By devoting himself closely to his studies, he qualified within a few months for his initial position on an engineering corps, and within 8 months from the date of his enrollment he occupied a position as transitman at a salary of \$100 a month. Continuing his studies, his salary was a little later made \$125, then \$150, and finally \$200 a month, as chief engineer in charge of a survey. Let us do a little calculating and learn what an education of this sort is worth. An intelligent young man, like Mr. Pearson, usually finishes a course of surveying and mapping in about 1 year by studying 2 hours a day and 6 days a week, and it is entirely unlikely that such a student would spend on the average a longer time. His studies would consume about 63 10-hour days, 626 hours, or 37,560 minutes.

Being a man in the twenties, it is safe to assume that Mr. Pearson has no less than 30 years of work before him. During that time at a salary of \$200 a month, he will

earn \$72,000. At his former work, with a salary of \$35 a month, his earnings would have amounted to \$12,600. It follows, therefore, that Mr. Pearson's training, during the next 30 years, will add to his income the difference between \$12,600 and \$72,000, or \$59,400; and these figures are based on the unlikely assumption that his salary will never rise again. In order to qualify to earn this additional \$59,400 we have shown that it required about sixty-three 10-hour days, 626 hours, or 37,560 minutes of study. Then for every day he studied Mr. Pearson will receive in round figures \$943; for every hour, about \$95; for every minute, \$1.58.

There is much food for reflection in the preceding figures. They demonstrate better than pages of abstract statements the value of correspondence instruction as a preparation for business.

America does not stand alone in the use of correspondence instruction as a preparation for business. Europe and South America have for some years shown their appreciation of its benefits. A notable factor in the development of correspondence school work in Great Britain had been the support which it has received from the nobility, Government officials, members of Parliament, large employers of labor, and other prominent men. Through the cooperation of the British Admiralty facilities have been offered by which hundreds of students have been enrolled in the British Navy, and, through the interest taken by the commandant of the army service corps training establishment at Aldershot, the Government was instrumental in having many of its noncommissioned officers enrolled for technical courses.

In Australia teaching by correspondence has long been recognized as a technical educational medium ranking with the very best. As early as 1908 the Postmaster General of the Australian Commonwealth issued official instructions encouraging employees in his department to become students.

In New South Wales the correspondence school was the first educational institution to be approved under the plan of the Government post and telegraph department to induce employees to study for promotion to higher positions.

In west Australia the Government has provided a fund with which it may buy scholarships for approved men, in order to give them an opportunity to advance.

In south Australia the royal commission on apprenticeship has announced that it will recognize correspondence courses on the same basis of efficiency as the Government technical schools in training apprentices. The Dominion of New Zealand has more correspondence students in proportion to its population than any other country on the globe. An instruction department is maintained at Wellington.

In 1914 the correspondence schools examiners at Sidney handled 28,000 lessons.

In South Africa, as in the other British colonies, correspondence work has the indorsement and cooperation of the Government. An instruction department at Cape Town handled 6,000 students' lesson papers in 1914.

Correspondence school work is also carried on in India, with headquarters at Rangoon. The headquarters at Singapore handles the work for the Straits Settlements, Siam, Borneo, Java, and Sumatra.

Latin America has proved a good field for correspondence schools. One school, besides offering courses written in English, also offers courses written in Spanish. This company did a very good business in Mexico before the war and is now doing a considerable business in Cuba and in other Latin American Republics.

This school has a good business in the Argentine Republic and conducts an instruction department at Buenos Aires. This department also handles the work for Chile, Peru, Uruguay, Paraguay, and southern Brazil. Seventeen technical courses in Spanish and 138 in English are now being sold in these countries.

The interest shown by these countries is such that there can be no doubting that in them instruction by correspondence will continue to grow and more and more be looked to as a preparation for business.

A SCIENTIFIC METHOD OF EMPLOYING OFFICE HELP.

By SHERWIN CODY.

When we buy wheat we do not go to the elevator and look the bin over, let some of it run through our fingers, and make an amateur guess at its value. No, we take the brief report of grading experts, and without loss of time know what we are buying instead of guessing at it. We are learning to test every car of Portland cement in the same way. It all looks very much alike, but its crushing or tensile strength may vary considerably under scientific test.

It is a very simple thing to test the speed and accuracy of an applicant for a position as stenographer by dictating a letter to her and asking her to get it out on a time record, and the large employment managers have been doing that for years; but the ordinary business man doesn't have a standard letter at hand, doesn't know how fast the stenographer ought to transcribe it, and falls back on guessing at her worth and finding out by experience, that is paying two or three weeks' salary to see how she does. Then after he gets settled with her he hates to change, and is by no means sure he will get a better one if he does change.

The fact is that on the average the stenographer's pleasant smile has more to do with getting her a job than her fundamental ability, and the ultimate efficiency of office forces is distinctly below what it ought to be. Some office forces are very superior, and some very inferior, but no employer really knows how his force compares with others. If he has an inferior force, he thinks all the rest have inferior forces also.

Something like two years ago the leading mail-order house of New York determined to raise the standard of its office force all along the line, and instituted a series of written examinations or tests of ability to perform usual operations in the business office, arranged in four general grades with rather elaborate variations to fit their different departments.

First, they wanted to know the intelligence and fundamental education of their lowest class, such as office boys coming from schools, janitors, etc.,. The point of view was that an office boy to be worth anything ought to be capable of promotion, and he wasn't a good office boy unless he had at least a full grammar-school education and had a mind that was both active and persistent. They framed a little attention test, very simple, to see whether his eye was quick enough in two minutes to catch every 2 and 3 in a mass of 150 figures; and a memory test, to see if he could apply himself for five minutes to fixing in mind the things he was told to do (in this case a typewritten page of house rules); and then whether he had a good fundamental education—spelling, arithmetic, and punctuation—which would be indispensable if later he were to be promoted to a more responsible position.

The filing clerks were given 15 letters, and were told to pick out of a bunch of 50 orders those which were called for in the letters—and they were expected to do it in a fair average length of time without an error.

A stenographer, among other things, they asked to copy a letter accurately. It was full of blanks and indentations, and very few were able to copy that letter decently, since in the schools they had not been trained to rigid accuracy. They gave tests on practicable grammar, not whether the stenographer could define this or analyze that, but whether she knew when to write "principal" and when to write "principle," whether she would say "It doesn't look right to me" or "It don't look right to me," and so on. They tested her spelling, whether she would spell "separate" with an e or "sensible" with an a, and what speed she would make.

Then when they found that all of the applicants were deficient on this point or that, they established a school of their own to supplement the work of the public schools and by specific training cure the defects, and also give special training for certain special phases of their own work.

In two years they have very materially raised the entire standard of their office work, they have high-school graduates where before they had grammar-school graduates and they have first-raters where before they had average mediums. They believe it pays, and they are developing their tests and supplementary training on a larger scale than ever before. At the last annual meeting of the National Association of Corporation Schools the Curtis Publishing Co. exhibited a series of similar tests which they had been using. A large life insurance company has in regular use a somewhat complicated series of psychological tests.

ORGANIZATION OF A NATIONAL COMMITTEE.

Experiments with systematic tests for office help in business houses have nearly all been tried by trained educators. Marshall Field & Co., the National Cloak & Suit Co., Sears, Roebuck & Co., and Swift & Co. have each employed an ex-superintendent of schools as employment manager or assistant to the employment manager, and under the direction of a practical business man have attempted to use the science of pedagogy. (A thoroughly wide-awake school man seems to learn business very much more rapidly than a person of business training solely learns the true science of testing and training young brains.) The success along this line has suggested that the business men ought to take hold of our commercial schools and have these tests of ability to perform common operations in the business office substituted for the academic examinations now all too general. The first stand for speed and accuracy on simple and common operations, while the second consist largely of answering questions and giving definitions on the higher theory of the subject. The trouble is that the educators know only in a general way what the business men want. If the employment managers would work out a series of tests on which they would be willing to make appointments, there is no doubt that the educators would promptly adopt them, because their students are all working for jobs, and anything that will help them get jobs will be quickly seized. Cooperation ought to facilitate the finding of the best-paying positions for the really meritorious, whether or not they have the personal appearance and self-advertising qualities which now very largely secure those good positions; and if the business man could know with certainty the different combinations of ability in each applicant, he could pick out with far greater certainty just what he needs in a certain niche, and avoid changing help as much as he does.

The cost of changing help has not been accurately investigated as to office forces; but some careful figures have been compiled by the head of the welfare department of a well-known firm of automobile makers, which show the cost of changing a skilled mechanic to be over \$80. First, there is the cost of finding the man and putting him on the pay roll. Then, there is the cost of teaching him the special duties and requirements of the particular factory. It takes him a couple of weeks to learn his job, to know where things are, and how things are done, and just what is wanted of him. There is also the cost of spoiled material while he is learning, the mistakes he makes, in various ways, and the indirect injury to business. And we must not overlook the rental value of the machines he is learning on that might otherwise be turning out a full product, and the factory space he is occupying, and the time of the foremen and assistants who are teaching him. The sum of \$80 for each new employee appears a moderate one.

With these facts in view we began two years ago to organize a national committee, consisting one-third of educators and two-thirds of persons in business with as large a number as possible of persons equally interested in business and education, and so far as possible persons representative of other national organizations that ought to cooperate. This committee has been incorporated under the laws of Illinois as the National Associated Schools of Scientific Business, not for profit directly or indirectly, but devoted to the public improvement of office efficiency both in schools and in business offices. The present officers are Gov. W. N. Ferris, president; Gerald B.

Wadsworth, of New York, vice president; Joseph Cummins, of Chicago, attorney and treasurer; and Sherwin Cody, of Chicago, managing director and secretary. On the board of trustees are Frank V. Thompson, assistant superintendent of schools, of Boston, perhaps the leading expert in the country on high-school commercial education; W. D. Lewis, principal of the William Penn High School in Philadelphia; and B. F. Williams, president of the National Association of Accredited Schools, the strongest private business colleges in the country. The movement is supported by President James, of the University of Illinois, who established the Wharton School of Commerce and Finance in Philadelphia. Altogether, these are the leading commercial educators of the country. On the business side among the trustees are Col. C. A. Carlisle, of South Bend, long advertising manager of the Studebaker Corporation, and an independent system expert; E. H. McCullough, of Chicago, the efficient secretary of the National Implement & Vehicle Association; Waldron O. Rand, of Boston, chairman of the educational committee of the American Association of Public Accountants, which has long had a deep interest in commercial education; Dr. Katherine M. H. Blackford, now of New York, who attained a national reputation as an employment expert with Harrington Emerson; Dr. E. A. Rumely, for several years manager of the Rumely Co., and at the same time promoter of his own Interlaken School near La Porte, Ind., and recently purchaser of the controlling interest in the New York Evening Mail; and C. A. Prosser, former secretary of the National Association for the Promotion of Industrial Education, elected at the suggestion of Secretary Redfield.

NATIONAL BUSINESS ABILITY TESTS.

This committee has concentrated its attention on developing and trying out a series of elementary tests of ability to perform common operations in the business office so as to measure speed and accuracy and also to test the fundamental education which all office employment presupposes and without which not even an office boy gives promise of future success. A series of tests was devised and printed in June, 1914, and tried out on employees by the employment managers of the National Cloak & Suit Co., the National Cash Register Co., the Burroughs Adding Machine Co., the Commonwealth Edison Co. of Chicago, Swift & Co., and in a limited way Marshall Field & Co. The very first trial made in the office of the Burroughs Adding Machine Co. was a test on spelling, and a young woman who was working nights to become a dictaphone operator made an average of 59 per cent. It was instantly apparent that she could never succeed in writing letters from the dictaphone unless she first learned to spell, and both she and the company were wasting time on the wrong thing.

In another case the clerks in a bookkeeping department were revealed to the general manager as being distinctly below grade as a whole, due perhaps to an erroneous standard of employment.

Another curious fact revealed in general was that only college graduates were able to make a grade on grammar approaching 100 per cent (no rules, definitions, or analysis given, only common examples of the wrong form and the right form to choose the right), and they probably got their knowledge from study of foreign languages. Ability to punctuate ran almost even with knowledge of grammar, except in one firm where the stenographers were especially high grade and had learned to punctuate.

The standard of accuracy of modern touch typewriting was shown to be singularly high. Scores of letters had scarcely a mistouched key. The object of the tests was to find out what were practical, how long the tests needed to be, what different kinds of tests were required. As a result 20 short, simple tests were devised which met the unanimous approval of the employment managers of the houses that cooperated, and were adapted to trying out in about an hour's time the following common classes of office employees:

Office boys and girls: Fundamental education in adding, spelling, and writing a letter of application according to very definite instructions, together with a test on

mental alertness to indicate quickness, and a memory test to indicate power to concentrate the mind in hard work.

General clerks, 16 years of age and older: Memory, clerical accuracy (filling out business blanks according to instructions, such as a retail-store check), speed and accuracy in handling fractions by short-cut methods and percentage, copying addresses and arranging alphabetically, and writing letter of application according to exact instructions.

Stenographers of lowest grade: Memory, advanced spelling, elementary punctuation, copying a typewritten blank for mimeographing, taking a dictated letter and transcribing, and writing full letter of application.

Stenographers of secretarial class or beginning correspondents: Memory, full test on grammar and punctuation, advanced spelling, taking dictated letter and transcribing, and finally composing three original letters in reply to inquiries referring to four pages of Wanamaker's catalogue which were printed and furnished in advance to the persons tested. The object was to see if they would notice that you couldn't ship shoes without the size, or that questions might be answered by looking at the pictures, and would use tact and patience in dealing with customers on trifling matters, as well as compose and punctuate their letters in good style.

Beginning bookkeepers: Speed and accuracy test on arithmetic, test on clerical accuracy (filling out business papers they had not seen before), handling correctly such business papers as checks, notes, money order applications, bank deposit slips, and invoice forms, copying addresses and alphabetizing—but not answering any technical questions on bookkeeping theory, since modern systems of bookkeeping are not taught in schools and business men care more for men of good material whom they can educate themselves.

These tests were published March 20 as a 24-page booklet, and at the same time the United States Bureau of Education sent out a three-page letter containing a general explanatory report on the investigation, with an offer to send the tests on request. This report was reprinted in full in the New York Times and many other newspapers.

HOW TO JUDGE THE RESULTS OF THE TESTS.

The next great problem was to have the tests given in representative schools and business houses to develop a quick and easy way of grading the tests, and to get standards that would indicate what grades ought to be made and how they should be interpreted.

Dr. George D. Strayer, of the Teachers College, Columbia University, and head of the Commission on Tests of the United States Bureau of Education, laid down the general principles for grading and judging the tests, and approved the plan that was finally worked out and actually applied to 4,169 separate experimental tests given to some 500 individuals through the courtesy of the following business houses, schools, and other institutions:

Business houses: Marshall Field & Co., Chicago; Swift & Co.; Commonwealth Edison Co.; Sears, Roebuck & Co.; National Cash Register Co., Dayton; Burroughs Adding Machine Co., Detroit; Bureau of Credits; National Cloak & Suit Co., New York; Filene's, Boston.

Schools and chambers of commerce: Boston Clerical High School; Cincinnati Chamber of Commerce (open, public test, mostly high-school graduates); Newburgh (N. Y.) Chamber of Commerce and Spencerian Business College; Holyoke (Mass.) High School; Oneida (N. Y.) High School; Walla Walla (Wash.) High School; Y. M. C. A. prize competition open to grammar and high school graduates in Chicago; Wendell Phillips High School, Chicago (one test); Central School, Troy, N. Y., under inspection of committee of business men.

The persons taking the tests were carefully selected as representative of the special classes whose ability it was desired to standardize. The averages resulting from the giving of the tests are therefore very closely typical of conditions in different parts

of the country and probably of the country as a whole. They represent, however, the higher level.

It appears that in every business house, in every department, there are intelligent-looking persons who have been selected because they appeared all right and were agreeable, but were far below the average of the department. For example in a bookkeeping department one person showed averages as follows, compared with the averages of the department (his included):

Individual: Memory, poor; business papers, 44 per cent; bookkeeping accuracy, 36 per cent; fractions—speed 17, errors 11.

Department: Memory, fair; business papers, 75 per cent; bookkeeping accuracy, 73 per cent; fractions—speed 36, errors 5.

In a very high-grade and carefully selected stenographic department one girl alone showed the following comparison:

Individual: Words per minute, 15; errors, 7.

Department: Words per minute, 49; errors, 2.

Another individual: Words per minute, 57; errors, none.

One high school, at the head of the list on the bookkeeping and figure tests, had 18 stenographers out of 30 who were below the standard minimum of 35 words a minute in transcribing shorthand notes, and those 18 averaged 12 words a minute. Another high school had only 1 stenographer able to reach 35 words a minute out of 20, while another had only 5 out of 19 who were not above 35. Another high school had none who reached the 35 word minimum.

It seems likely (though the tests were not wide enough to prove that) that cities have their superiorities and weaknesses.

Grammar-school graduates in Chicago show a knowledge of elementary applied grammar that might be represented by 16 per cent—taking the hundred who came to the Y. M. C. A. for the prize examination. In general, however, not one grammar school graduate in ten seems to have any real knowledge whatever of applied grammar as shown in choosing the right form when the right and wrong are given on points of universal application.

It appears that correspondence is taught in schools only as a matter of form. The average on getting the facts right in one high grade correspondence department in a business house was: Good, 4. Among order writers and similar clerks in another: Good, 3½; but in the high schools it was poor, 2½; while the tact among the business correspondents was, good, 4; among the general clerks, good, 3½; and in the schools, poor, 1½; and the form and correct English were among the business correspondents, excellent, 5; among the general clerks, fair, 3; and among the schools good, 4 plus.

In general, however, high-school graduates are well up to business employees of experience in most subjects, above them in some, and inferior only in the matter of making errors. All they need is levelling up, having their weaknesses and deficiencies corrected, just as the employment managers need to even up their force by dropping the costly inefficient.

The third edition of the National Business Ability Tests now published will give on the record blank side by side with individual markings the averages of grammar-school graduates under the head of grammar-school education, high-school averages under the head of high-school education, and business-houses averages under the head of business efficiency, or (minimums that seem to be accepted widely as standard); and also there will be recorded as "maximums" the averages of the five highest (fairer than the one highest, who might be a genius or special expert). The good employee ought to have a record somewhere between these two, and the business man who looks over the individual record will have just what he needs for comparison and a basis for forming a judgment. While the averages obtained from these 4,000 tests are only a beginning, and year by year may be expected to change as thousands of others are added, the fact that they have been carefully selected as typical and all freaks have been thrown out and all doubtful cases makes them a very

fair working-basis for a beginning. Fresh tests, closely parallel though different, will be supplied to business houses that join our organization, and employment managers will be able to see at a glance where to place an applicant who takes them. The tests have been shortened as much as possible while still preserving the proportionate ratings pretty closely, and can be given in 2 to 30 minutes—all for any one kind of applicant (say a stenographer, tested on 9 points) in about an hour and graded in 10 to 15 minutes. (Any good clerks can easily learn to give the tests and also to grade them by the key with speed and uniform accuracy.)

THE 100 PER CENT STANDARD.

In certain things such as figuring, spelling, typewriter operation, filling out business papers, filing, and copying, the business world demands approximately a 100 per cent standard of accuracy, while the schools have a tendency to operate on a 70 per cent standard appropriate to Latin and Greek where the 100 per cent standard is manifestly impossible. The National Business Ability Tests, if they can be generally established in business offices and schools, will undoubtedly stimulate schools to adopt the 100 per cent standard in some such matters as spelling. Leonard Ayres, of the Russell Sage Foundation, has listed all the words in 2,000 business and professional letters of all kinds, and finds that seven eighths of all the words used are contained in a list of 542, less than 100 of which probably give trouble in spelling. Obviously every school can teach every pupil to spell correctly every one of those 100 words. R. C. Eldredge, a factory manager in Niagara Falls, N. Y., has classified all the words in 270 newspaper articles by 200 different writers and finds a total of 6,002, some of which are special, many of which are common and easy, and about 1,200 of which may need spelling drill. Even those 1,200 may be mastered practically to the 100 per cent point by most pupils in schools if they will concentrate right on those and not waste their time on hundreds of other words that probably will never be used in letter writing at all. Prof. W. Franklin Jones, of the University of South Dakota, has carried out an even larger experiment, listing the words in some 15,000,000 words of composition, and finds all the words used more than once contained in a list of 4,532, of which about 1,000 require special concentrated spelling drill. If the words that are always being misspelled can be mastered by every one, most of our spelling trouble will disappear. If the national spelling tests are taken from a known list of 1,000, it is a pretty sure thing that those who wish to pass the tests and get jobs will master practically all of them.

Whether the common principles of punctuation and the common errors of grammar can be narrowed down into a few pages of drill that can be mastered to the 100 per cent point, remains to be proved; but if anything will get this concentration on just what the business men require, it is the establishment of national tests.

Of course this narrow, specialized proficiency is a good thing only in a few certain lines. In other directions the broad power to think in a clear, businesslike way is far more important and more difficult to develop; but the practical test on answering letters ought to induce schools to abandon teaching merely the external forms of letter writing and give some attention to handling human nature skilfully and accurately, putting accuracy, tact, and good feeling into letters, and cultivating the large outlook of human service in business.

Give young prospective employees in schools and in business something definite to work for in order to get the good jobs and the good pay, and they will promptly concentrate along those lines.

Many employers have been extremely discouraged by the seeming indifference of their own employees to study to improve themselves and so fit for the higher positions and higher salaries. There can be no doubt that the substitution of definite tests for vague promises and suspicion of favoritism will work a revolution on this matter, and employees will work for promotion in just the same way that they study in schools to fit themselves for their first positions.

UNIVERSITY EXTENSION WORK FOR MEN IN BUSINESS.

By SAMUEL MACCLINTOCK,

Educational Director, LaSalle Extension University, Chicago.

A recent editorial in the *Railway Age Gazette*, pointing to the success of a number of railroad presidents, and reviewing their constant habit of study and research, closed with this significant statement: "These men are not students because they are presidents, but they are presidents because they are students."

BUSINESS DEMANDS EXACT KNOWLEDGE.

Business is becoming increasingly more exact, more scientific, and therefore professional. Less and less is it a matter of guesswork or personal opinion. It moves in accordance with laws and principles, causes and effects. Knowledge consequently becomes indispensable for its successful conduct, and business knowledge becomes a synonym for commercial power. This is just as true in Cuba, Honduras, and the Argentine as it is in the United States of America.

A hard-headed, successful business man, the general manager of a large wholesale house and former president of the Chicago Association of Commerce, said recently: "Experience shows that the man who knows most about his business seldom fails, and the man who knows least about his business seldom succeeds." The conclusion which this man states is well supported by an analysis of Bradstreet's statistics of business failures. These statistics show that a lack of thorough knowledge of business in general and of the particular business in which the individual had been engaged is the primary reason for failure in the great majority of cases. On the other hand, where we find a due appreciation of accurate, scientific knowledge and an intelligent application of that knowledge to any given business, we see a successful and profitable enterprise. I need only mention the United States Steel, the General Electric, and the Standard Oil companies as striking examples.

Mr. Edward N. Hurley, vice-chairman of the Federal Trade Commission, recently made public some interesting statistics showing that there are about 250,000 business corporations in the United States, leaving out of consideration the banking, railroad, and public utility corporations. It is an astonishing thing that over 100,000, or considerably more than one-third, of these corporations have no net income whatever; 90,000 make less than \$5,000 a year, while 60,000—the most successful ones—make \$5,000 a year and over. Is it to be wondered at that 95 per cent of the men who venture in business fail?

Turning from the net income to the total volume of business done by these corporations, the striking fact to be deducted is that while big business is important, it forms, after all, but a relatively small portion of the total trade and industry of the United States. From the point of view of our national welfare, the success of the smaller business men is as essential as that of the big corporations.

Is it any wonder that individual business men and corporations are coming to consider the training of their staffs as one of their most vital problems? A prominent railroad president put the question thus:

"What troubles me most is the question of promotion of men to subordinate executive positions. I don't know who should be promoted and my department heads don't have the proper confidence in their own recommendations. Can you suggest a way to promote men intelligently?"

The chief engineer of a great manufacturing company expresses himself on this same matter in these significant words:

"The problems of the immediate future will create demands for ability beyond the possibility of present methods to supply. * * * The time-honored method of waiting for executive force and leadership to reveal itself in the ranks has produced

magnificent men, but this method will not meet the great need now coming upon us. It is inadequate. It will result in a famine of leadership. It belongs to the past days of relatively small things."

In a recent report, the Massachusetts Commission on Industrial Training states that inefficiency in American industry is not due chiefly to a want of manual dexterity, but primarily to a want of what it calls "industrial intelligence."

In view of these facts, it is extraordinary, but true, that business is the only great occupation which a man can enter to-day without previous special preparation. No one can become an engineer, a lawyer, an architect—he can not become even a stonemason or a motorman on our street cars—without some previous preparation, but he can go into business no matter how inadequately he may be prepared in the science of business.

After entering upon his business career, the average man has been inclined to depend upon his own personal experiences as his sole means of advancement. He has looked to precedents. He has tried to do things just as others have done them. This is much as if an engineer should fail to make use of the tools and inventions of science, and depend upon his own naked hands for accomplishing the arduous work in which he engages. Experience is a good teacher, but is frightfully expensive. Suppose one should try to become an electrician, a chemist, or a doctor by the process of try-and-fail—that is, by personal experience alone. Could anything be more costly, more futile, or more absurd? Yet this is exactly what thousands of business men are doing and expecting their employees to do. The great danger of personal experience alone is that it is made up of mistakes and half-mistakes as well as of sound achievements. The knowledge which comes from experience alone is too limited, too personal, and comes too late in life to be a real foundation for notable achievements. Henry Ford was right when he said: "The great trouble with the school of experience is that the course is so long that the graduates are too old to go to work."

There must be, and fortunately there is, some more direct, more scientific, and more economical plan by which every man who will may gain that knowledge and insight into business which makes for power and success.

UNIVERSITY SCHOOLS OF COMMERCE AND ADMINISTRATION.

The belief of the average business man that higher education has nothing of a distinctively practical character to offer him is fast disappearing. The modern man is demanding more and more of our educational institutions that they shall not give all their time to cultural and scientific subjects but shall study business as a field worthy of the best efforts.

In response to this demand of modern business for exact knowledge, a number of our best universities have established within the past few years special schools of commerce and administration for the preparation of students who want to make professional careers in business. These schools now study and teach business in much the same way as coordinate schools do engineering, law, or medicine. The business activities of the whole country and even the whole world constitute their laboratory and provide material for their teaching. Their aim is to educate in the broadest sense—not simply to develop skill in performing the routine tasks of some one line of work. They explore the fullest limits of business activity, describe its operations, analyze its achievements, and draw out its underlying principles.

To acquire such information and to cultivate such mental qualities is a splendid preparation for leadership in business. The schools of commerce and administration which give such training serve primarily the men and women who look forward to executive positions—who have the brains and the ambition necessary to succeed, and who realize that thorough preparation is essential to success.

It is such knowledge and training that the schools of commerce and administration have to offer the business world. It is a valuable training, but how many men can avail

themselves of it? More than 85 per cent of our boys and girls leave school before they are 16 and never do any systematic studying after that. In the whole United States there are only 22 definitely organized schools of commerce and administration. The total number of enrolled students in the regular classes is apparently about 6,000. Consequently this course of training is only for the favored few—it is entirely beyond the reach of the great majority who lack the time, the money, and the academic preparation needed for attendance.

UNIVERSITY EXTENSION DIVISIONS.

Some of our leading universities, recognizing the very limited numbers which they are serving, have endeavored to extend their usefulness to those who can not come to the campus by taking the university to the people, at least within their own States. Thus they endeavor to reach the people, wherever they are, who seek what the university has to offer and make available to them the knowledge which is the fruit of research.

This extension work of the university away from the campus is carried on in several ways, the chief of which are: (1) classroom instruction, (2) lectures, and (3) above all, correspondence. Classroom instruction is not essential to adults who know how to study and are in earnest in seeking information. The inconvenience, even of evening classes, is considerable, and most adults object to sitting in miscellaneous groups, possibly containing employers or employees or business rivals.

The second method—evening lectures—is excellent for the purpose of arousing interest and enthusiasm, but is a poor means of carrying on systematic instruction. Correspondence work remains as the chief means available for carrying on organized instruction for adults engaged in business.

The first advantage of the correspondence method is that it comes to the student at his home, office, or factory, through the mails and at his convenience. The work is carried on by means of textbooks, lesson assignments, examination papers, and problems. The student sends in his written work to his instructor, who criticises it, grades it, and returns it with such comment and suggestion as may be needed. In this way the student goes through the subject in orderly fashion, mastering each lesson as he goes and consulting his instructor by correspondence if serious difficulties arise.

Correspondence work, when well conducted, has received the praise and encouragement of many of our most progressive and open-minded educational leaders. Thus the late Dr. William R. Harper, president of the University of Chicago, said:

“The work done by correspondence is even better than that done in the classroom. The correspondence student does 20 times as much reciting as he would in a class where there are 20 people, and the results stay with him.”

That this is true is abundantly evidenced by the large number of successful candidates which correspondence work prepares for bar, C. P. A., civil service, and other competitive examinations.

The number of colleges and universities having correspondence departments is only 32 in the whole United States, and the total number of students enrolled is approximately 20,000, including the large number taking agricultural work. These extension divisions are engaged in teaching: (1) the great body of traditional and cultural knowledge, (2) the history and development of present-day institutions, and (3) specialized technical and professional groups of subjects, such as business. The number of students thus engaged in studying business subjects is certainly not more than 10 per cent of the total number enrolled—a mere handful of all those in business who could profitably be supplementing their personal work and experience by this broader knowledge of others. Furthermore, the extension divisions, naturally enough, teach only those subjects which are taught in residence; that is, the higher branches of knowledge—those of college grades. This work is moreover sometimes limited by formal academic requirements and is frequently planned more for teachers and

students looking forward to academic credits for their studies than for those already actively engaged in business.

The universities, furthermore, are not the only sources of knowledge of practical value to the business world by any means. Both our State and Federal Governments go to great expense to collect information about business and useful for business which nevertheless is but little used. Take the Department of Commerce of our Federal Government, for example. It is run at an expense of approximately \$15,000,000 a year. It collects and prepares statistics of great value, yet Mr. Fahey, former president of the United States Chamber of Commerce, says that not more than 10 per cent of this information is ever made available for practical use.

The distribution of knowledge is as great a social and economic need as is the discovery of new truths. In many departments of study immense advances have been made in the past few years, while in others our existing knowledge has been worked over, classified, and better organized. Not to make all this available to the largest number of people possible means a great social loss. "On the diffusion of education among the people," said Webster, "rests the preservation and perpetuation of our free institutions."

CORRESPONDENCE SCHOOLS.

The demand for practical business training and the inability of the established educational institutions to supply it have led to the founding, during the last few years, of a considerable number of schools operating on a commercial basis and endeavoring to supply the want.

There are possibly over one hundred such schools in existence to-day. Most of them are poorly organized and poorly conducted, and have but a limited enrollment. Their flexibility and also their nonacademic character are shown by the subjects they propose to teach. One offers instruction in wrestling, another in auctioneering, another in well-drilling, others in motoring, tree surgery, and hairdressing. One claims to teach "French in thirty days," another "chirology in six weeks without trenching on your spare time," while still another offers to teach "journalism while you wait." Such "schools" have no more relation to the able and successful correspondence schools than the little one-horse colleges scattered throughout the country here and there, calling themselves "universities," have to Harvard, Cornell, and Chicago.

The reputable correspondence schools use university extension methods in supplying, at a relatively small cost, practical training of a vocational character to all adults who desire to learn something worth while, wherever they may live and whatever their previous education.

Over 300 different subjects, including the mechanical trades, professions, arts, sciences, languages, and business subjects, are being successfully taught to-day by the correspondence schools. Their text material, lessons, quizzes, examinations, and practical problems are often prepared with great care and at great expense, by business and professional authorities of the highest rank. Such material is characterized by clearness, simplicity, directness, and comprehensiveness. It must give the student all the information he needs for mastering the subject in the shortest length of time possible. One of the most convincing evidences of the high-grade character of many of the special textbooks prepared by correspondence schools for their own work is the fact that these same texts are extensively used by resident colleges and universities.

In the high-grade correspondence school, the instruction staff likewise is made up of well-trained specialists, alert to see that each student gets along well in the system and to give him such supplemental help as he may need. The instruction is thus not only of a high character on its formal side, but is personal and inspirational as well. Correspondence work, when thus conducted, is well planned, systematically organized, and professionally administered. The big schools, on account of the extent of their operation, can conduct their work on a plane quite out of reach of the majority of resident schools.

The pedagogy of correspondence study is absolutely sound. The student takes the training along with his daily work at the very time when he needs it most, thus happily combining the theory and the practice of the subject. All the work is done by himself alone and in writing, thus making for exactness. He is neither hurried nor retarded, nor is he abashed by having to confess his limitations before others.

The only education of real value is that which teaches the student to think clearly and to grasp the reason for any line of action, to know the "why" and not to be satisfied simply with the "how." This the correspondence instruction is well fitted to do, both because the student is a grown man or woman realizing the worth of what he is doing and because of the methods employed in carrying on the work. It is because they can learn while continuing to earn that most students are able to do work by correspondence.

It must not be supposed, however, that the modern extension university confines its work solely or exclusively to formal instruction. In addition to such work it does a highly useful part through its consulting-service department. It collects data upon current topics and developments in its various fields of instructions. It may have an able staff of specialists in its several lines, such as traffic, banking, advertising, salesmanship, organization, and accounting, who render confidential personal and business reports to its subscribers through these channels. Thus, such an institution becomes a veritable clearing house for business information.

The correspondence schools are distinguished from extension divisions of the resident universities primarily by being private enterprises. They are conducted to make a profit by rendering a service worthy of the fees charged and in response to a demand for something which the other educational agencies do not supply.

METHODS USED TO SECURE BUSINESS.

They employ both solicitors and advertising and use all the recognized business methods of securing enrollments. A considerable portion of their students come from high-grade, successful men who know the advantages of supplementing their daily work and experience by a comprehensive course of practical training covering the whole field in which they are engaged. Some of their enrollments come, on the other hand, from the easy-going, incredulous, or unambitious. In order to make him who is asleep take notice, the advertisement must paint a picture of success—money, position, power. The picture must be drawn in such bold, striking colors as to make many stop and think, who would otherwise pass by unheeding. This is the justification offered for much of this commercial type of advertising, namely, that it is the only means of accomplishing an admittedly desirable end. The good correspondence schools have in their files abundant evidence of appreciation on the part of those who have been thus aroused and who speak often with gratitude, sometimes pathetic, of this as the only opportunity that ever came to them in life of escaping the bondage of ignorance and its consequences.

KEEPING FAITH WITH THE PEOPLE.

The correspondence school must judge rightly as to what the people want in sufficiently large numbers to make a commercial success of its enterprise and must supply the service which it agrees to give if it wishes to continue in business. The majority of students pay for their courses in small installments of, say, \$5 or \$10 a month, stretching over a period of one, two, or three years. If the school does not give reasonably good service and thus convince its students that it is living up to its part of the contract it can not collect its installments without more expense than the amount involved. Furthermore, a school which does not play fair with the public plays a losing game and soon drops out.

STATE EDUCATION FOR ADULTS.

It is frequently said that the State ought to provide free education to all who want it—adults as well as minors. Perhaps so, but let us not forget that this would involve an enormous increase in taxation, and that public schools are not yet ready to supply the practical business education demanded. Furthermore, you can give instruction away but you can not give education. The very process of paying for the training which he takes makes the average person much more appreciative of it than he would otherwise be. The profits which the correspondence school makes, as compared with other competitive business enterprises, depend upon the skill with which the work is carried on and the services which it renders to the public.

TRAINING FOR EXECUTIVE WORKERS.

I wish now to speak of the training for those in executive work which is being offered by the extension method. By an executive I mean any person who performs work requiring the exercise of judgment for the direction of work performed by others. Thus not only the chief executive, but every department head or subordinate to whom discretionary power and responsibility have been delegated, is performing executive functions. The efficiency of an institution is not measured solely by the brain power of the president or general manager, but by the combined product of the minds of all the workers in the establishment.

A good executive is measured by his ability to judge, plan, and execute. Sound business judgment is the result of exact knowledge of all the factors involved in a decision. The man who knows does not have to guess. Modern business is fast developing beyond the point where an executive in making his decisions can trust to luck, hoping he will guess right in 51 per cent or more of the cases. The exercise of executive power requires broad knowledge because the executive is dealing with forces rather than with things or people. Every business factor must be considered in its proper relation and proportion. Suppose seven factors—A, B, C, D, E, F, and G—are involved in a given business proposition. The executive who knows the exact value of each factor and the interaction of all these factors can make a sound, dependable decision, while if he does not understand the significance of every element in the equation, his decision becomes at best a guess.

This illustration shows what a certain business man, holding a really responsible position, meant when he said, speaking from his own experience: "A big business problem isn't really a big problem—it's just a collection of little problems."

That the executive and near-executive and would-be executive, and all those who carry on the administration of business, need systematic, organized training in business to supplement their daily work is coming to be recognized by shrewd leaders in business. Frank A. Vanderlip, president of the National City Bank of New York, says:

"The changed scope, character, and methods of modern business have united to demand men with a training superior to anything that was ever needed before as the successful commercial leaders of the future. That general training can not be had in the highly specialized process of the routine work of the office. The practical school of experience is too wasteful as a teacher of general principles. * * * The time has passed when it was possible for a man to master the details and theory of a business by merely doing his duty faithfully from day to day. No longer is it possible for a man to rise to the top in commerce or industry without bringing to the task a determination to employ his leisure time in the acquisition of special knowledge along the lines of his business."

Likewise a recent writer in the *Commercial and Financial Chronicle* says: "There will soon be small place in the business world for either the ignorant man or the man who knows only the rule of thumb."

Now what are these business subjects that such a generally trained man should be acquainted with? I shall group the big, fundamental, underlying divisions of busi-

ness into five classes—I mean such operations as are common to every line of business, whether in North America, Central America, or South America. These five classes of operations are: (1) producing, (2) financing, (3) marketing, (4) transporting, and (5) accounting. Underlying these operations common to every line of business are certain subjects vitally essential, and any successful business course must be built upon them.

PRODUCTION PROBLEMS.

Taking up now the production end of business, we find the chief problems to be those of organization and management. One needs to know something of the advantages of individual proprietorship, partnership, joint stock companies, corporations, holding companies, and other forms of associative business effort. After these questions have been settled, there remain questions of internal administrative organization. When shall he use line, staff, functional, or committee organization? To what extent are standardization, time studies, and other efficiency methods practicable? What shall be the system of wage payments? What is, for example, the Halsey Premium System or the Emerson Efficiency System? Upon all such matters the business man can be systematically informed through the extension method of instruction.

FINANCING.

Under financing, the business man needs to know efficiency methods of raising and handling capital. He needs to know how to use banking services to greatest advantage. He needs to know something of the higher business forces which operate in investment and speculation. He needs to know how to interpret business and banking statistics, foreign trade developments, and other great forces which govern the “ups and downs” of business.

MARKETING AND DISTRIBUTION.

The profitable marketing and distribution of his goods is one of the ever-present problems of the individual merchant or manager. The subjects of advertising, salesmanship, sales administration, retail merchandising, and credits and collections are all so closely interwoven with marketing that every keen business manager should know all that modern research, investigation, and experience have brought to light.

TRANSPORTATION AND TRAFFIC.

Transportation is a part of the cost of production. Freight classification, weighing, packing, and miscellaneous means of reducing freight charges, as well as the means of handling freight claims, using transit privileges, and other matters pertaining to transportation and traffic are being taught successfully by the extension method. Likewise, the subject of ocean traffic and foreign trade, export procedure in regard to packing, routing of shipments, consular invoices, custom-house regulations, classification of commodities, financing of foreign shipments, and the use of foreign agents are all presented so that the small manufacturer or distributor, as well as the big one, may know how to take advantage of his opportunities and develop profitable customers in Guatemala, Quito, and Caracas.

ACCOUNTING AND OFFICE MANAGEMENT.

One of the greatest opportunities for successful work by the correspondence method is in connection with the accounting and office management side of business. The most modern and efficient methods of organizing the office, laying out the different divisions, standardizing the work, keeping the records, as well as teaching sound principles and modern practices of accounting are all being successfully taught by this means.

The foregoing strictly business subjects may well be supplemented by a group dealing with the most fundamental subject in business, namely, the man himself, his personal efficiency, and mental power.

THE PERSONAL EFFICIENCY GROUP.

Take business psychology, for example. The late Prof. William James demonstrated very clearly that the average man has great powers which ordinarily are unused. The psychological laboratory has revealed a lot of practical information about our mental make-up and habits of extreme importance. A thorough, searching self-analysis, based upon such information as is now available, often reveals personal inefficiency and weaknesses which proper exercise of care will overcome. The extension university thus takes the work of such eminent psychologists as professors Münsterberg and Scott, for example, and makes that knowledge available in understandable form, with either personal or business applications.

Reviewing such a work on "Business Psychology," in the current number of the Journal of Philosophy, a distinguished writer says: "The publishing of such a practical and thoroughly scientific text is indicative of the progressive spirit of the modern correspondence school."

THE CONSTRUCTIVE CREDIT MAN.

Let me point out the importance of such business training by analyzing the work of certain positions ordinarily considered highly technical and specialized in their scope. The credit man, for example, who has a working knowledge of accounting, business law, principles of finance, price tendencies, business cycles, purchasing, the psychology of debtors, effective correspondence, advertising, and retail merchandising is a truly constructive factor in his firm, increasing business rather than restricting it. He is in a position to give intelligent advice to customers in trouble and thus bring them back on their feet and retain them as profitable customers of the house.

THE BANKER.

The banker who understands all these principles and knows the business problems of his clients becomes a much-sought-after business counselor in his community. His efficiency as a banker increases many fold. Specialization in finance, plus breadth of business grasp, measures his true ability as a banker.

THE BUSINESS-TRAINED ACCOUNTANT.

The business-trained accountant who has a deep insight into problems of law, organization, production, selling, and office management is incalculably more valuable to a concern than he who simply understands the principles of debits and credits.

THE ENGINEER.

The engineer or skilled mechanic who is trained only in the science of his work and not in the art of management rarely finds his opinions called for by the president or board of directors. Once he has acquired this broader business knowledge in addition to his technical skill, he becomes an invaluable man in the counsels of his concern.

THE GENERAL MANAGER.

But it is to the general manager or chief executive that this broad business knowledge is of the greatest importance, whether he controls the destiny of his own business or that of the largest corporation. By means of such knowledge he gains a broader view of business management and operation, strengthens his business foresight, assumes greater initiative, and is able to make better use of the talents and machinery at his disposal. Such knowledge keeps him from developing a one-sided business, top-heavy in production, selling, financing, or some other division. He sees the importance of all departments because he has a knowledge of business as a whole. He acquires an analytical grasp in handling large masses of detail, recognizing instantly

what is of major importance and what of minor importance. He becomes an educated man with large conceptions and a broad outlook. Efficient as he may be, he knows there are ways in which others have surpassed him and that any clear-thinking, keen-minded business man can use or adapt to his own advantage the identical working plans, methods, and experiences which have brought success to others. Like the expert chess player, he sees instantly the far-reaching effect of every move made by himself or his competitors, and he knows how to adjust himself to the new conditions.

A business education of this practical type develops a knowledge of fundamental principles, keenness of observation, breadth of view, and, above all, the power to think and arrive at sound conclusions. The big significance of such practical training is being perceived by some of our ablest railroad and industrial managers. President Ripley, of the Santa Fe, recently wrote regarding such training: "Your enterprise has my entire approval and I shall be glad to be of service if opportunity offers." The traffic commissioner of the Toledo Commerce Club says: "I confess that it would be almost impossible for me to get some of the information which has been so clearly set forth in many of your publications, notwithstanding the fact that my general knowledge of rate conditions would lead me to believe that certain documents either were or had been in existence. If I can find your works valuable, then those who have not had as much experience as I certainly ought to find them more valuable."

In conclusion I wish to say that systematic extension study gives a man a more comprehensive and better rounded out knowledge of the policies and principles that make for business success than can be gotten from personal experience alone or from any hit-or-miss system of unorganized reading. Systematic, organized business knowledge makes a salesman out of a clerk, a merchant out of a storekeeper, a producer out of a credit man, and a business general out of a manager. That it pays goes without saying. American industry has advanced in character and efficiency because correspondence schools, though only in their infancy, have developed the study habit in hundreds of thousands of men and women throughout the country. University extension work is truly one of the biggest ideas in modern education and one of the most hopeful plans for promoting the efficiency of adult workers in all lines of industry.

I think I may safely say that in carrying on such work the La Salle Extension University, of Chicago, with over 30,000 student-subscribers, and other such institutions are rendering to the business men of the country, and thus to the cause of general education and efficiency, a distinctly valuable service.

I will conclude by quoting to this effect the words of a distinguished author, teacher, and industrial engineer of national reputation:

"High as you have set the standards for each function in business and business organization, these standards are reached in some particulars by certain progressive concerns. They would be reached in many more particulars and by many more firms if a better way were more generally known, as I believe will be made known by your splendidly conceived course."

THE ALEXANDER HAMILTON INSTITUTE.

By JOSEPH FRENCH JOHNSON,

Dean of New York University School of Commerce Accounts and Finance.

The Alexander Hamilton Institute, with its modern business course and service, was founded in 1909. As dean of the New York University School of Commerce I had been receiving for many years frequent requests for help and advice from ambitious young business men who could not attend a university school of commerce. Some wanted instruction by correspondence. Others sought advice with regard to the best

literature on business. All seemed to realize that big business had brought with it problems which an untrained mind could not solve. These inquiries showed a genuine demand throughout the country for scientific education in the field of business. New York University was unable to satisfy such a demand. Without a sufficient endowment it could not undertake the maintenance of a correspondence school.

Talking one day with my old friend, President Vanderlip, of the National City Bank of New York, about the education and training for a business career, I told him about the increasing number of inquiries for some sort of reading courses in business which a man could carry on at home. He at once suggested that a group of business men and college professors should get together and do something, and he offered to cooperate. Then was born the Alexander Hamilton Institute.

A number of us in New York consulted on the subject. We collected the inquiries which had been coming to us during preceding years and analyzed them carefully. Questionnaires and letters of inquiry were sent to some of our friends in the business and educational world, and from their replies we collected a variety of suggestions. The work could be carried on most successfully, it was decided, if organized as a business corporation, as in that way it could be best managed and financed. While the idea was not primarily to make money, the best results were anticipated from an organization so developed that the corporation could be reasonably certain of making a fair return on the necessary capital invested. That decision has proved to have been a wise one, for the work of the institute has been carried on in a more effective way than would have been possible under any other form of organization.

When it came to the decision as to the class of work to be carried on it was deemed best that it should follow very closely the material and method of resident university work. University schools of commerce had already secured the approval of practical men who were cordially cooperating with them. In fact, nearly every such faculty consisted to some extent of men who were giving their major time to business activities and were teaching only a few hours a week, as much for the pleasure afforded as for any financial reward. Other business men were in touch with the development of the work, and some were demanding that they be put in touch with the information which was being developed in these schools.

It was evident that the chief need was not for miscellaneous reading but for an organized, logical statement of the basic principles on which successful American business is founded. The extensive correspondence referred to, together with our own experience, offered a sufficient basis upon which to plan a nonresident reading and study course in business subjects. After nearly two years of hard preparatory work in determining methods of operation and in writing the various kinds of material, the Alexander Hamilton Institute was formally established.

Briefly, I want to outline for you the purpose of the Alexander Hamilton Institute. It is not a correspondence school. It gives no diploma and no certificate. Its aim is to supply a reading course which shall parallel the work in the various university schools of commerce and shall be conducted along the same pedagogical methods, so far as it is possible to do that in absentia. Appealing as it did to men of a mature type, it was necessary to develop the work along lines distinctly different from anything ever tried before.

The policy of the institute management has always been to encourage enrollments only from those who are prepared to use the course and service to their advantage. In the main such men fall into two groups: First, those who are already executives or in semiexecutive positions, or those who have the education to be in line for such a position; and, second, men holding highly specialized positions who should be in line for work of a more general character. Among the latter are mainly technical men, specialty salesmen, and the like.

Since the institute was organized there have been enrolled about 35,000 active, ambitious, energetic men. It is interesting to note that the average age of a sub-

scriber is about 32 years and the average salary about \$2,650. A large percentage are college graduates, though a college training is not an indispensable qualification. Men of ability and ambition who have enough serious purpose to be willing to spend a portion of their spare time in reading and thinking about business problems are those to whom its appeal is made.

In planning the material of the course it was necessary to keep in mind that there are really only four fundamental activities in every business—producing, marketing, financing, and accounting. The principles underlying these activities are fundamental and apply in all lines of business. Young men frequently come to me with the suggestion that their business is “different” or that accounting for a retail store is different from the plan of accounting taught in the school of commerce. They betray their inability to get down to bedrock thinking. All businesses have their points of difference, just as every man has an individuality of his own, but we all know that human nature, broadly speaking, is the same in all of us. In a like sense, all business moves along the same lines. One who really understands the fundamental principles of accounting can apply them as easily to a country store as to a manufacturing concern.

The broad principles of modern business science, therefore, apply throughout business. But it is not enough to know thoroughly accounting or marketing or any other special division in which one may be working. The big problem in business to-day is to develop the executive, and the first requisite of the man who guides a modern business organization is that he shall be thoroughly familiar with the fundamental principles which govern all divisions of his business. Even if a person be working entirely within one division, it is necessary that he have a broad training. No matter how cleverly a marketing or an accounting problem may be met, a solution which affects unfavorably any other phase of the business is worse than useless.

Therefore the plan for the modern business course and service is premised upon the fact that every executive and every man who expects to forge ahead in business must have a thorough understanding of each of the four divisions of a business. Nothing essential should be omitted, nor is there room for the inclusion of anything foreign.

The modern business course and service seeks to supply to the young man who does not find it convenient to take up work in residence at one of the university schools of commerce an opportunity to get this broad training for executive work. Hence the institute provides for its subscribers a reading course paralleling a university school of commerce course under the guidance of an active staff of business men and professional teachers. It also supplies in the form of printed talks, lectures, and problems as nearly as possible instruction similar to that given in college classrooms. Furthermore, it offers the free services of its staff in the reviewing of problems and in the discussion of such questions as the subscribers themselves seek light upon.

As in most efficient organizations, there is an advisory group. In a military organization you would call them the general staff. We call them the advisory council, for that name seems to explain exactly their function. They have general supervision and direction of the policies and activities of the institute. No important move of any kind is made without the sanction of this advisory council. The body is composed of the following gentlemen beside myself:

Frank A. Vanderlip, LL. D., president of the National City Bank of New York. Elbert H. Gary, LL. D., chairman of the board of directors of the United States Steel Corporation. John Hays Hammond, LL. D., mining engineer. Jeremiah W. Jenks, LL. D., professor of political science, New York University.

It consists, therefore, of two university educators, one banker, one mining engineer, and one organizer of large business enterprises. Each one of them is a member of the council because he is sincerely interested in promoting business education.

The active work of the institute is carried on by a staff of 31 men. Nearly all of them are members of the faculties of university schools of commerce. Each man is a specialist who in some one business subject is entitled to rank as an authority. Furthermore, every one of them has had sufficient business experience to guarantee his practical sense and good judgment. Many of them give a part of each day to business practice as well as to university teaching.

The special lecturers are business men of high standing, who have given part of their time and thought to the preparation of written lectures specially prepared for the course. They are selected for their conspicuous ability to develop some particular point in the course from their own successful experience.

To carry on such a business as we have in the institute, we need a large and efficient office force. This consists at present of about 250 people, among whom we have a considerable contingent of specially trained young college graduates, who are doing clerical work and preparing to take the places of staff members later. Every young man has a definite goal and a definite line of development and promotion toward that goal.

Finally, as the modern business course and service must be properly explained to business executives, we have a marketing organization, composed largely of college-bred men who themselves are well trained in business. We sometimes call them our traveling professors, and really they are that. As local representatives, they keep in touch with our subscribers and cooperate with them most effectively.

So much for the personnel of the institute. The working equipment is similar to that of a university school of commerce, except for the additional machinery for handling students by mail instead of in person. We have our own library and librarians, but we go further than any university school of commerce in the collection of material. From the very first the institute has maintained a research department for the collection of fresh data with regard to business methods and practices. The primary purpose of this department, of which Dr. Jeremiah W. Jenks is active head, is to keep the institute abreast of the times in regard to business methods. This we must do to carry on our course and service in a way to appeal to successful business executives in our large and up to date corporations. Such men soon detect pretense and theorizing. We must know exactly how business is being conducted in our large corporations. Around Dr. Jenks we have a group of men trained to get facts and use them.

Of several other functions of our research division I will tell you in a moment. I am bringing it up here to show you how we went about preparing the material of the course, for, first of all, in our work we needed a specially planned series of text books. We could not use the regular college texts. They are made for youths in their teens and, as a rule, make no strong appeal to business men.

As soon as we had decided what subjects to include in the course we had to work out in a general way the method of treatment of each subject, and then find a man broad enough and unbiased enough and practical enough to develop it in that way. We had no idea how large a task we had undertaken until it was under way. In general we secured the services of professors in university schools of commerce—Wisconsin, Illinois, Northwestern, Pennsylvania, New York University and others, but we had to make sure that such teachers were men who at the same time had had business experience and who were in close touch with business.

No sooner had the first volume in the series been issued than there came a request from universities for copies for their class rooms. While the books had been planned primarily as part of a nonresident reading course, it is interesting to note that one or more of the volumes is in use to-day in forty universities in this country and Canada.

The text volumes form the backbone of the course. They bring to the reader a survey of business principles from the executive's point of view. For you must keep in mind that we are not training accountants or advertising men or bankers: we are

training men to broaden out through a knowledge of the whole of modern business, and to become, first of all, better department heads by knowing the relation of their departments to others in the business. From that it is a natural step to general executive work.

In the development of our text volumes another problem arose. We needed a different treatment of cost accounting for the business man from that suitable to teach young men in the university how to become cost accountants. We needed a book for executives who wanted to know how to supervise a cost department and what to expect from it, and for department heads who needed a general knowledge of cost methods even though they need never do cost work. We worked over the subject thoroughly and came upon the work which Prof. Kimball of Cornell had done with the General Electric Co., and other concerns of similar standing. We prevailed upon Prof. Kimball to prepare our material in this section of the course. In this way we have developed each section, and for each we have selected a man, the best we could find, to handle the subject. These men and a few others compose our staff.

In order to induce the so-called "tired business man" to follow the course systematically and keep on following it, it was necessary that all material be written in simple and interesting English. Now that's a hard job, especially for a college professor. If any of you have ever tried to write scientifically and simply at the same time, you know the problem. But I believe we have succeeded. At least our subscribers tell us we have.

We have tried to make each volume self-contained. For this reason we have left out bibliographies; for our people want us to tell them the whole story, rather than to tell them half and then refer them to other books for the remainder. Each volume is carefully indexed and contains a set of quiz questions, each referring to a similarly numbered paragraph. These are for use in testing the readers grasp of the subject. At the same time the mechanical features have not been overlooked. The books are printed from a special type, large enough for easy reading. In every way we have tried to anticipate and overcome human inertia, and bring the subscriber a maximum from his reading.

The subject matter of the course is divided into the following nineteen heads: I. Economics of business. II. Organization. III. Management. IV. Marketing methods. V. Salesmanship. VI. Advertising. VII. Correspondence. VIII. Credits. IX. Traffic. X. Accounting practice. XI. Auditing. XII. Cost finding. XIII. Corporation finance. XIV. Banking principles and practice. XV. Foreign exchange. XVI. Investment and speculation. XVII. Insurance. XVIII. Real estate. XIX. Commercial law.

But the texts are not the whole of a college or of a nonresident reading course. If we are to follow pedagogical methods developed in resident work, we need to get something to take the place of the instructor. Now what are the instructor's functions? First of all, in assigning reading on a topic he gives an informal talk on it. Next he takes up some special point and elaborates on it. At the end of each section through quizzes and examinations he tests the students understanding of the subject and his ability to use his knowledge in the solution of definite problems. Finally, he stands ready to assist the young man in case he has trouble in getting things clear in his mind.

In planning the modern business course and service we arranged for a staff to do these very things in connection with the subscriber's reading of the textbooks of the course. First, we prepared a series of informal talks of 16 to 20 pages each. They introduce the subscriber to the reading in the texts just as the college teacher outlines the reading for his students. But we go a step farther than he, for we illustrate some of the principal points through actual cases in story form. The talk has a further purpose, for, being interesting in itself, it serves to whet his appetite for the reading.

Next we send him regularly also another type of printed pamphlet, which we call

a lecture. This corresponds to the college professor's elaboration of the most important point in each assignment of reading. Like the talk, it differs from a lecture given to the college student only in the fact that it is written by a business executive who has been particularly successful in his field, and comes in printed form rather than by word of mouth.

The series of lectures constitute one of the most important features of the plan. They are intended, first, to show how practical men have actually applied the principles discussed in the modern business course and service; second, to give further information as to large and highly developed business concerns and their methods; and third, to bring subscribers into close touch with a wide circle of representative, successful men of affairs.

The other necessary unit is the test of one's reading. The simple question of memory is taken care of through the quiz questions in each text volume, and that test the subscriber must apply himself. The bigger job is the test of his understanding of the principles developed in the course and of his ability to use them in actual business cases. For this purpose we have a series of business problems in printed form. The first one, for instance, is used in connection with the first section of the text in economics, which treats of the economics of production, and in connection also with the corresponding talk and lecture. The latter is on the subject of the essentials of a successful enterprise, and elaborates on a point in the early chapters on economics. The first problem takes up an actual case of a problem which arose in a well-known cement concern, involving their decision on the building of a branch plant at a distant point. The problem is stated fully in a printed pamphlet, and instructions are given to work up a business report based upon the facts stated and the principles developed in the corresponding section of the course. A subscriber sends his solution, and receives in return a letter of criticism and suggestion from a staff member, together with a review of the problem.

The series of text volumes are sent immediately upon the acceptance of an enrollment. And let me say right here that not every enrollment offered is accepted. While it is difficult to decide positively who are not sufficiently educated or well enough trained in the school of experience to get satisfactory results, we do suggest to a considerable number of young and immature men that they satisfy their needs in other ways. If a young man can readily enter resident work at a university school of commerce we urge him to do so, for we realize the limitations in our method. When applicants need more general education we frankly tell them so. We can not afford to accept the enrollments of any who can not use the modern business course and service satisfactorily, and we do not do so.

Every fortnight for two years the subscriber receives by mail a group of pamphlets consisting of the talk and either a lecture or a problem. The mere receipt of the material serves as a stimulus to regular and systematic reading. But this is not enough. We must so far as possible keep in personal touch with our subscribers. As already noticed, our field representatives who take enrollments are permanent members of their communities, and take occasion to drop in on their subscribers occasionally.

Much, however, remains to be done on the initiative of the staff. In addition to answering the inquiries which come to us regarding troublesome points in one's reading, and in addition to reviewing the problems, an obligation rests on the institute to keep after the subscriber as other things begin to crowd out his time for reading, and to encourage him to follow the course systematically. We assume this obligation cheerfully, and every little while we check up each subscriber's progress and write him as circumstances may require.

Of course, we want to help each person in applying the fundamental principles developed in the course to his own work and we stand ready, therefore, to assist him with criticisms and suggestions. But obviously some of his questions will be such as

require constructive work and frequently research work. To handle these cases our research division has prepared a series of constructive reports on the most commonly occurring questions—such questions, for instance, as the development of a cost accounting system for a public utility company, or a detailed plan for the organization of a credit department in a small bank. These reports are complete with forms and other illustrations, and show how a particular problem has been worked out in the light of principles developed in the course.

The ideal is to help our subscribers get the fundamental principles so clearly in mind that they can solve their own problems. That is real teaching. By means of helpful letters of criticism and suggestion and by means of these detailed constructive reports we can point the way, show how it should be done, and furnish detailed help as well.

Sometimes the subscriber has neither the time nor the organization to solve his problems, even with such help, and wishes the continued assistance of an expert or group of experts. So many requests have come to us to undertake such work that the research division is now prepared to accept contracts of this sort from business houses. This work is outside the regular course and service, but to a large extent the same staff and the same equipment are used for both. A considerable number of such jobs have been completed recently. They range all the way from the development of simple sales plans to the reorganization of business policies and methods. Incidentally the information gathered in such work is of great value in connection with the regular course and service.

For those subscribers who have completed their two-year course of reading we have established the continued course and service. A small fee entitles them to continue their relations with our service department, which has so frequently proved of assistance to them. It entitles them to receive our modern business supplement, whose purpose may be described as an interpretation of current events in the business world in the light of the principles laid down in the course. While principles do not change their application does. The supplement serves to exhibit the modern instances of old principles and to furnish a survey of the publications of greatest value to the business man. It is issued quarterly to the subscribers, and at the end of each year is also given in bound form, uniform with the modern business service. Through this continued course and service the older subscribers keep in touch with the activities of the institute and are in a position to secure new reports and lectures.

I am reminded that many of my hearers are from the Latin American countries. Up to the present time we have been so busy taking care of the development of the institute here in the United States and Canada that it has been impossible to do much toward introducing its work in other countries. However, I was much gratified to learn a few days ago that we have reached out with our message to a goodly number in the island countries near by. I find we have 240 subscribers in Porto Rico, 110 in Cuba, 177 in Hawaii, and 241 in the Philippines. So far in Mexico we have only 24, and in South America about the same number. But we have under consideration a plan of broadening out as rapidly as is consistent with the development of our organization and ere long some of you from South America will begin to hear of the modern business course and service from the keen young business executives of your home cities.

Although the institute is only six years old as a definite idea, it is to-day recognized, I believe I may say, as a real force in the upbuilding of bigger and better business. Its success is evidence that the idea back of it—to train men for broad executive responsibility—is sound and timely.

I am proud and glad that fate has let me be a university teacher, and I am equally glad and proud that she has let me have a part in the development of this new kind of a university—the Alexander Hamilton Institute.

COMMERCIAL PREPARATION THROUGH CORPORATION SCHOOLS.

By LEE GALLOWAY,

Professor of Commerce and Industry, New York University and Secretary of the National Association of Corporation Schools.

THE NEW COMMERCIAL ERA.

Society in the past was so anxious to provide itself with productive equipment that it quite overlooked the atmosphere in which individuals worked. As a society we have dug through many strata and reached new levels and until very recently we have been employed in trying to dig out new economic efficiencies with the same old educational equipment which was better suited to other times and conditions. The technical education which established a science of law in the place of pettifoggery, a science of medicine in place of quackery, and a science of engineering in the place of the earlier rule of thumb methods has proved its worthiness and woven itself into our educational curriculums. The world is well settled in its attitude toward the necessity of these subjects and is satisfied with the methods of pedagogical attack; but in fitting itself for efficient legal, political, and economic control in so far as production is concerned, society has paid little professional attention to its commercial development.

The great field of distribution which has grown up in an infinitely complex manner to care for the products of the farm, of the mill, of the mines, and so on, with which the engineer provided us, has been left unattended. Men have gone into commercial activities with little preparation or none except as a few rule-of-thumb methods were doled out to them in the course of their apprenticeship. Relatively few years ago an attempt to carry out a thorough scheme of commercial education would have failed. But we have now reached the commercial era and it is permeated with the atmosphere of public service.

Although commerce has been the great spreader of democratic principles and the commercial relations between different countries were the means of breaking down trade barriers and the like, yet the institution of commerce itself was the last to be affected by the democratic ideas which were disseminated by its agency.

ADVANTAGE OF THE CORPORATION SCHOOL FOR COMMERCIAL TEACHING.

To establish a course of commercial instruction that will prepare the student technically and professionally and that will endow him with the ideals which make for business ethics is the problem not only of the public school, business college, commercial high school and university but of the great employing corporations as well. The corporation is beginning to assume its share of the responsibility in fitting men to serve the public more efficiently as salesmen, financiers, accountants, office employees and the like.

The corporation school has this one thing greatly in its favor—it undertakes not only training for real business, but it affords besides the opportunity of experience on the firing line in contact with the real work and real business men. The corporation school means specialization in a particular branch of commercial or industrial life and is fruitful because its students get actual experience in connection with their training, because they are constantly in a position to test theory in practice, and because they have an opportunity to interpret their practical experiences in the larger light of the experience of their masters in a given field.

CLASSIFICATION OF COURSES.

Broadly speaking, commercial education as given by corporation schools may be classified under two main headings: 1. Salesmanship courses; 2. General office work, including accountancy.

It must be remembered that the students in the corporation schools are in most cases adults and that in the methods of teaching must be employed adult psychology and adult points of view. The chief purpose of the school is not merely to make more efficient industrial machines by functional training, but the welfare of the individual is also an important consideration.

It must further be remembered that no matter how much time is devoted to gymnastics, personal hygiene, and rest periods, these will not necessarily make employees more efficient as workers. It is definite training for the work that counts. No matter how well groomed and well fed and well exercised the girl behind the counter may be, her selling ability is the thing of first interest to the firm and she may not have the slightest vestige of it, although she may be strong and wholesome. She needs to be taught how to sell.

Salesmanship courses include the following subjects: 1. Knowledge of the product and the competitor's product. 2. Personal methods of selling. 3. Business policies. 4. Business English. 5. Advertising methods. 6. Study of market distribution (proposed and not yet adopted). 7. Economics. 8. Organization and management

I. KNOWLEDGE OF THE PRODUCT.

In studying the product, the nature of the instruction depends on the nature of the product. In some of the corporation selling schools this constitutes the only course of study. The amount of time given to it varies from a few hours to months and even years. The purpose of studying the product in selling schools differs from that of the apprenticeship schools in that the student does not learn how to make the product but must understand its structure with a view to making sales. The method of teaching the structure of gloves will vary decidedly from the method employed in teaching the make-up of an expensive illuminating apparatus. In the former case a few lessons on leather, wool, cotton, and silk, their characteristics, the method of cutting and sewing gloves will most likely be enough, while the illuminating installation would need to be taught in terms of the nature and production of light, diffusion, the comparative value of various illuminants, distribution and illumination curves, structure and functions of the eye, and so on. The girl who stands behind the counter selling lace will need to approach the study of her product in quite a different way than the man who is to sell industrial machines and who must understand the details of engine construction thoroughly.

The study of the competitor's product is important in that the arguments that the competitor uses may be answered or overcome. What are the inherent qualities of his goods? How do they compare with the goods the salesman represents? What individuality has each? Is there any particular reason for purchasing one in preference to the other? How do they compare in price? To what particular class of people would either appeal? These are important questions nowadays. Intense competition makes it necessary that not even comparatively unimportant points be overlooked when trying to arouse desire for a particular article of sale.

HOW KNOWLEDGE OF ITS PRODUCT IS TAUGHT BY NORTON GRINDING CO., OF WORCESTER, MASS.

As the sales work of the Norton Grinding Co. depends on engineering ability, it is necessary that the salesmen have a thorough knowledge of the way in which their products are manufactured and how they are used. Most of these salesmen are graduates of colleges or technical schools and have a fairly good basis for this specialized study of the product. The course lasts about two years and the time is spent entirely in the various shops and office departments of the works. Knowledge of the product is the only course given.

During the first week the men are taken through the various departments where they observe closely the different methods of manufacture in use for different products and

then write a report on what they have seen. Next comes shop work, operating cylindrical, surface, and internal-grinding machines and inspecting work done by grinding. They also inspect machines as they are being assembled. This is followed by six weeks in the truing and bushing room, where the wheels are finished ready for testing and inspecting. From the packing room they go to the stock room, the drafting department, the mechanical laboratory, the cost, order, credit, publicity, refractory, and other departments, all the time under the supervision of the foremen who instruct the salesmen in the various different technical processes. In the stock department a general review is given and a comprehensive examination is taken to show how much has been mastered up to that point. No classroom work is done. It is all actual laboratory and shop work. No textbooks are used. The educational department is directly responsible to the general manager, but there is an advisory committee consisting of eight officers of the company and heads of departments. Within the department there is the general division of educational work, correspondence supervision, and in a formative stage, the employment division. The head of the education department is a graduate of an engineering school with experience in manufacturing and office work and also in professional teaching. The assistants are all from the shops.

The Norton Grinding Co. has a review course for the salesmen on the road at the home office each year for a period of two weeks. The men go over the processes of manufacture and office methods again just as the prospective salesmen do except that the course is very much cut short. Each man has an opportunity to try out the various things which he has seen done in his territory, and a few days are spent in the experimental laboratories. This sort of review makes the men competent to advise as to the selection of the proper wheels for various purposes.

II. PERSONAL SELLING.

Not only is the technique of the goods taught for the sake of sales alone, but technique is taught in connection with the wants of the public. There has been a change from the policy of *caveat emptor* and salability depending on price to the policy of "the public be pleased" and "the public must be served."

The courses which take up the question of personal salesmanship may be divided up as follows:

1. The selling process proper, which is the development of a sale beginning with the preparation for the interview with the prospective customer and ending with the order for the goods.
2. The study of the prospective customer; his personal characteristics and how to appeal to them.
3. The psychology of gaining attention and interest.
4. The demonstration proper; how to present the goods in a favorable way; how to offer convincing arguments.
5. Essential physical and mental qualifications of the salesman.
6. The ethics of business.

PERSONAL SALESMANSHIP TAUGHT BY THE FIRST CORPORATION SCHOOL.

In the first corporation school personal salesmanship only was taught. This school was founded about 20 years ago by the National Cash Register Co., of Dayton, Ohio. Its first session was attended by the various salesmen who had been called in to the home office to talk over the methods they employed to make sales. One of their number who had met with particular success in selling told his method verbally. His plan was written out by a stenographer and a "primer" was produced which contained various talking points for the sale of the cash register. Each man was asked to memorize the primer. Many of the men rebelled at first, and the management found it advisable to let it go for a time. But by getting the best salesmen to make a personal demonstration of their methods of selling at occasional gatherings, most of

the rebellious salesmen were induced to use the primer. Crude as the method was, the results showed that it was worth while.

From this simple beginning has grown up a variety of sales, office, and accounting schools within many corporations. The National Cash Register Co. has evolved quite a complicated course of study and training for its employees, as have many other large companies.

The prospective salesmen are selected by the district sales managers. They are tried out in the field for three or six months or a year and if they seem to be fitted for the business they are admitted to the school. Three sessions are held each year. Each class is limited to about 50 men. It lasts five weeks. The student's expenses are borne by the company. Personal selling methods, business policies, and advertising receive attention.

Every two weeks a meeting of the district managers is called. For a few hours besides different selling problems are discussed in detail.

Besides, there are post-graduate courses for the men who have had the preliminary training in salesmanship. These meet occasionally under a competent instructor and take up the finer points of salesmanship, management, and business policies.

The "owl" classes are held several evenings a week in the winter months and in these the office workers are given an insight into the rudimentary ideas of selling so as to broaden the scope of their vision.

III. BUSINESS POLICIES.

The purpose of teaching business policies which usually include the history of the factory or store and so on, as well, is to arouse interest in the merchandise and enthusiasm for the concern. No matter whether the sales person be a book agent who travels from place to place, one who sells pianos, automobiles, or power engines, or simply one who stands behind the counter to sell writing paper and calling cards, each one of these constitutes the great connecting link at all times between the store or factory and the buying public and the demeanor of each one of these means to the customer the character of the firm represented. If the sales people are competent, courteous, and obliging, the store or factory assumes these characteristics. Incompetence, discourtesy, and lack of cooperation are a menace to the prosperity of a business and no modern concern that wishes to be successful neglects the teaching of the policy of proper standards in regard to the treatment of customers. One way of instilling a desire on the part of the sales people to qualify in this way is to get them interested in the store or whatever business it may be in an inspirational way. This is usually done by the manager or some other officer who is well qualified to do this.

The policy of the United Cigar Stores Co., with their thousand stores, which is taught in its various store schools, may be summed up as follows:

"Our first consideration is for the consumer, for on his continuing goodwill depends our existence.

"Our next consideration is for our employees, for we are dependent on them for keeping the consumer's goodwill.

"We keep driving home to our sales people, 'Look after the consumer first, last, and all the time. Do this faithfully, make his interest your first interest and the company's interest will take care of itself.'

"Every customer who enters our stores is doing us a very great favor and we must give him the best service to make sure he will come again."

The New York Edison Co. teaches business policy to its employees under the name of "Policies and organization of the New York Edison Co." Twenty-six lectures covering a period of seven months are given by the heads of the various departments. Written examinations follow and certificates with gradings are issued.

Some of the topics are as follows: The commercial man's need for the rules governing electric installations; organization and scope of the contract and inspection depart-

ment; the relation of the auditor to contracts and credits; keeping pace with the public; cooperation v. competition; the education of employees; the company's methods of handling complaints; organization and scope of the contract and inspection departments; the operating department; the value of full and correct original information; the relation of the district office to the general office and the public; commercial engineering; advertising by mail; educational requirements in modern industry.

It will be noticed that organization and management are included and the course is far more complicated than that of the department stores and retail concerns which make cooperation and courtesy the chief subject of consideration.

The Larkin Co. teaches its policy in its office manuals here and there as follows:

"Your slogan to-day, to-morrow, and at all times should be, 'service to the customer, loyalty to Larkin Co.'

"No matter how irritable the customer may be or in what a disagreeable manner she may express himself, do not allow it to affect the tone of your letter in the least degree. Maintain a high standard of dignity at all times.

"The customer is always right until it has been proved conclusively that she is wrong, and then you must use the greatest diplomacy in presenting the facts to her. You must not contradict, criticize, or antagonize her in any respect.

"Remember that your promise to a customer is the Larkin Co.'s promise, and one should never be made unless you are absolutely certain that it will be fulfilled. A broken promise always hurts and it robs us of the customer's confidence.

"Remember that a busy customer does not care to wade through a lengthy explanation, the chief asset of which is flowery language. She wants plain facts and you must give them to her in as simple and courteous a manner as possible."

IV. STUDY OF ENGLISH.

As the salesman is in personal touch with individuals either by word of mouth or by correspondence it is evident that the mastery of the means of expression is one of his most important accomplishments. The requirements of clearness, accuracy, and force are essential in business language and the corporation school properly provides a place for it in its curriculum. A salesman's effectiveness is greatly enhanced if his vocabulary is large enough so that he can convey the exact shade of meaning that he intends to express to his hearer. In business dealings it is necessary that the same words mean the same things to both parties. The simplest sale is a contract and the first essential of a contract is the mutual agreement of the contracting parties. Accurate language promotes understandings and assists in creating a favorable impression at every point of contact between individuals.

Larkin & Co. issue these instructions in the office manual: "Call everything by its right name. When you mean a catalogue, don't call it printed matter; or if you are writing about a chair, don't call it a rocker. Your style of letter writing will be distinctly your own and no one will interfere with it, as originality is desired. However, the Larkin Co. prefers the simple, easy, conversational style. This can be acquired by carrying on an imaginary conversation. All meaningless and time-worn expressions used by the average business house must be eliminated from our letters. Don't use borrowed phraseology."

Correct spelling, too, is one of the essentials of salesmanship, whether it be in making out an ordinary sales slip for a retail-store order, or in writing out a collection or sales letter, an order for wholesale goods, or an application for a position. If addresses are misspelled, time is lost in the delivery of goods and a great deal of ill-feeling results. No business house can afford to have its representatives careless in the matter of spelling.

English is taught in the corporation schools by different methods. It may consist simply of a few lectures or occasional short concrete talks on common errors in speech

or it may take the form of a course on "Effective speaking and correspondence," as illustrated by the New York Edison Co. Some houses issue a brief manual to their sales people telling them what and what not to say in dealing with customers.

V. THE STUDY OF ADVERTISING.

Very few corporations have thus far established courses or methods of teaching advertising proper. But as advertising is so closely allied to selling, it will undoubtedly receive a place in corporation schools before very long, especially in the selling schools, inasmuch as cooperation between the selling and advertising departments is absolutely essential.

VI. THE STUDY OF MARKET DISTRIBUTION.

The study of market distribution is equally as important as the study of the product. What sort of people buy the goods? Where do they live? Under what conditions do they live? What can they afford to pay? Will the product be sold locally or all over the country or even abroad? What is the total consumption of your kind of product? How is the desired market reached? Are your goods sold directly to the consumer or to a jobber or a retailer? These are only a few of the questions to be worked out.

VII. ECONOMICS.

The subject of economics undoubtedly forms the culmination of a commercial course of study. It might be called the philosophy of business. No abstract principle need be presented; concrete questions may begin to open the eyes of the wage-earner to certain economic principles which will greatly enlighten him to the point of teaching him to get the large view point of business policy and how to weigh principles and actions in the light of fundamental laws. "Why do you work?" may lead to other questions and considerations such as desire for food, shelter, luxury, prestige, and so on to some of the deeper phases of economics.

The Goodyear Tire & Rubber Co., of Akron, Ohio, has courses in economics for its foremen and the heads of departments in their production department. The instruction is carried on mainly by means of lesson sheets. The following headings are considered in lecture 3: Natural agents and labor in the production process; the forces contributed by nature; labor—definition; the supply of labor; efficiency of labor; quantity of labor.

At the end of the lecture are the following questions: Classify the contributions of nature to production. Give three ways in which land contributes to production. Name three contributions of nature that are appropriated by man; two that are not. Why does a cold climate lead to greater production? What sources of power given by nature are most common? What is labor? Show that physical and mental labor are necessarily closely linked.

State in a single sentence the work that labor really does in production, or the function that it performs. Make a diagram which will show what factors the supply of labor depends on.

This outline and these questions will show how economic theory can be taught concretely and effectively in the corporation school. The foremen are taught organization and management and business English besides economics. The production department "flying squadron" have organization and management, economics, and rubber manufacturing practice in detail. The latter subject is given in the form of lectures by department specialists, all the lectures being codified by the factory school. The rest of the work is taught by a professional teacher, assisted by another professional teacher and clerical service.

VIII. ORGANIZATION AND MANAGEMENT.

With the exception of the above company, nothing comprehensive has been done with organization and management excepting to touch on it under the heading of business policy or system. It is embraced in the lectures of the New York Edison Co., and separate periods are devoted to it in the new evening school conducted by the General Electric Co., of Schenectady, in cooperation with the board of education.

COMMERCIAL EDUCATION IN THE DEPARTMENT STORE.

There are approximately 50,000 sales people in the department stores of New York City alone, hence it is evident what possibilities there are in the training of these. Besides, when one counts up all the retail selling establishments from the country "general" store to the chain stores and affiliated groups of department stores, a comprehension of what may be accomplished by training all the sales people connected with them dawns upon one.

As stores grew larger and needed more and more employees, it was found that there was difficulty in securing even moderately competent sales people. Merchants discovered that it was necessary to find some way of eliminating the unfit besides dismissing them from service immediately. By an investigation of the desired qualifications that sales people should possess in order to make sales enough to insure profit, it was found these could be reduced to certain fundamental characteristics which might be inculcated to some degree into the minds of those employees who were at least not below mediocrity.

One of the first requisites was found to be the desire to serve, and after that came the knowledge of how to serve. Experience showed that the primary means of inculcating a desire to serve was by teaching the business policy of the store. The sales person must first of all believe in the store and its merchandise enthusiastically. One of the recent department-store failures was said to be largely due to the fact that the sales people had lost faith in the store and made no effort to make sales.

The next step was the teaching of the store system. The sales slip was explained, and practice was given under the supervision of an instructor. The same method was followed in the making out of other forms, such as transfers, special-delivery slips, and the like which were taken up one at a time.

A third step was instruction in the care of stock and its systematic arrangement. Store manuals were issued to each employee, and these were expected to be followed conscientiously.

The fourth step was personal methods of selling or the technique of selling. Talks were given in the classroom, demonstrations by instructors and students, and personal supervision of each sales person with criticism was made occasionally by the instructor or department head.

The latest advance in department-store schools is the study of merchandise. Only a few stores have worked out the problem of how to teach a knowledge of the goods. Sales people are moved so often from one department to another, and it is not easy to get the buyers to work up the material as it should be presented, but it is being done in some of the foremost department stores of the country.

The study of store merchandise originated quite a number of years ago in the attempts of a lace buyer in a large New York store to instruct those in his department on laces, their history, manufacture, and so on. He gave them a talk each morning for about 20 minutes until the subject was covered. The result was that the lace department had a larger volume of sales and a quicker rate of turning over than any other department in the store. Purchasers were inspired by the intelligent and ready discussion of comparisons and values of laces and this led to confidence in the goods and in the store.

Business English, including instruction in legible handwriting, the corrections of errors in everyday speech, spelling drill, and theme writing is also taught in some of the department stores.

A few of the largest houses have junior courses for those who are employed as messengers and cash boys or girls. In most cases these left school as soon as they were legally qualified, and in many cases they reached only the sixth or seventh grade of the public school. At Wanamaker's regular classroom instruction under competent teachers is given about four hours a week on store time.

At the Strawbridge & Clothier store in Philadelphia the junior course lasts three years, and consists of English, arithmetic, penmanship, and commercial geography. Three hours a week on store time are given over to study. This is followed by a senior course lasting two years, which includes salesmanship principles, store system, penmanship, arithmetic, merchandise, and English.

DEPARTMENT-STORE EDUCATION ASSOCIATION.

There are in the department stores of New York City 28,000 girls and women. These go into their positions without preparation. They have little chance for promotion, and the wages on an average are lower than those of the higher sort of factory work. Realizing that here was an opportunity to better the conditions of a whole class of employees, a number of prominent New York men and women organized the Department Store Education Association less than two years ago.

The objects of the association are as follows: 1. To study at first hand the methods and conditions of department-store employment. 2. To develop salesmanship to the basis of a skilled occupation and give it a professional standard.

As a beginning, two complete and nine departmental store studies were made in order to ascertain the relations of the girls to store management in general, their opportunities for promotion, and the methods for measuring and rewarding sales efficiency. An experimental school lasting three and one-half months was held at Lord & Taylor's department store. More than a hundred saleswomen attended weekly conferences with the various department heads for the study of their special problems. It was found that the percentage of high-school graduates among them was very small and the majority had not even finished at the grammar school. Few of them understood what they were trying to sell and most of them seemed satisfied to go on with their superficial knowledge, thinking that their problems and difficulties would be solved by experience. Upon the basis of this survey the association worked out a plan of education.

EDUCATIONAL CLASSES AT STERN BROS.

After two months' preparation in cooperation with Stern Bros., at whose store the association studied the special work of a number of different departments, a school was started at the store. Three trained teachers from the outside conduct the classroom work under the supervision and with the assistance of an educational director who is particularly well qualified to manage this work.

The course of study comprises:

1. Stock (knowledge of the goods): Classification in department; materials and qualities; arrangement and care; color, form, and style.
2. Personal salesmanship: Types of customers; approach to a customer; closing a sale; demonstration sale for discussion.
3. Commercial ethics (business policy): Relation of employees to store; relation of employees to each other; relation of store to customer.
4. Business English: Errors in speech; diction—the use of accurate adjectives to describe goods; other parts of speech.
5. Arithmetic: Rapid calculation; fractions, discounts, etc.
6. Geography of New York.

The following outline will illustrate how knowledge of the goods is taught. Typed lesson sheets are issued to each member of the class as the lessons progress, and these are kept in binders until a sort of a crude textbook is completed for review and reference.

Lesson on caoutchouc, or india rubber:

- I. History of india rubber.
- II. Kinds: 1. Para—where found; its rank. 2. African—where found; its rank.
3. Plantation, or East Indian—where found; its rank.
- III. How shipped.
- IV. Process of preparation; seven processes described.
- V. Substances mixed with rubber; nine substances described.

Certificates are issued at the end of the courses to those who have done the work satisfactorily. In May, 1915, 44 certificates were issued to the first class, in July about 50 more, and a new class was started in September.

The results of the school so far have been most satisfactory and encouraging. Many of the saleswomen seemed eager to learn their stock thoroughly and to do their work with real professional spirit.

Personal hygiene also is given attention by lectures and advice by the health director, and gymnasium classes are held once a week in the evening.

COOPERATION BETWEEN THE STORES AND THE PUBLIC SCHOOLS.

It is the purpose of the association to coordinate their work with that of the public schools of New York City. Conferences with a view to doing this are being held and will undoubtedly be fruitful. Requests for a normal course for teachers was made of the board of education, for as the work develops many teachers who are qualified not only by pedagogical training but business experience will be needed.

COOPERATION BETWEEN RETAIL STORES AND THE SCHOOL IN BOSTON.

At the union school in Boston the department stores sales girls and women attend classes in salesmanship. An advisory committee made up of executives of several of the large stores helps plan the work of instruction. The students receive full wages while attending school and their day's work is about equally divided between the store and the school. They come at 8.30 in the morning and ring in their time just as they do at the store. The time cards are sent to the stores each week, and if the girls are late or absent the stores deal with them personally and discipline them according to their own methods.

The course of study embraces salesmanship, the stock and its care, textiles and raw materials, including fabrics and tests for adulterations, color and design, display of merchandise, business arithmetic, elementary personal economics, and store problems.

There are now more than 600 graduates. One of the chief arguments for this sort of allied teaching for sales people is that the number of positions to be filled is enormous, while the high schools teach only stenography and typewriting in a vocational way.

OFFICE WORK SCHOOLS.

It is gradually being recognized by business men that too little attention has been paid to training office employees. Ordinarily when an applicant is given a new position, he is simply told to do a certain kind of work. Very often the instructions are vague and indefinite and the new employee struggles along blindly and indifferently. Frequently he is a misfit, but it is not discovered until he has been a decided loss to the company through expensive errors. It may be that the importance of being exact has not been impressed upon him and he forgets to check his order blank back against the customer's order or writes size 8 when he means size 16 or

enters an order for 200 gross when it should be 200 dozen or perhaps he sends goods to Montana instead of Minnesota. As a result, there is a loss of time, a loss in extra transportation charges, and an angry customer who will not repeat his order.

There are only two ways to overcome lack of exactness and lack of cooperation and coordination. One way is by the issuing of an office manual and the other is by training the employees in schools. For an office employing more than 100, a school is really necessary, while smaller offices can get along with a manual.

An office manual is a sort of textbook which describes in detail each duty and operation that is required of the employee. Sometimes it is in loose form so that leaves may be added as required. Not only is each operation described but the reason for doing it in a certain way is given and its relation to the other operations in the office is set forth. Besides, the policy and the scope of the business and charts showing the exact position and authority of each employee are also given.

ILLUSTRATION OF AN OFFICE MANUAL.

The Larkin Co., a mail order house, of Buffalo, N. Y., issues a manual of this sort. The first chapters were written in 1900, and these have expanded to 53 chapters in loose-leaf form, describing the routine in the different departments. It is not only a reference book but serves as a textbook also. It is revised constantly by a corps of competent men. The following extract from chapter 26, headed "Shortage complaints," will illustrate the contents of the manual and the method employed:

"1. Shortage complaint received without new order.

"2. Unindorsed freight bill received and complete package short.

"3. Caused by substitution—our error.

"Mail reader: Open a correspondence (prepare a folder in which the necessary papers are to be assembled). Attach shipping authority and order and pass to the traffic correspondent.

"Traffic correspondent: Advise the amount of return charges and pass to the division correspondent.

"Division correspondent: Offer article received in error at selling price, less return charges, except: if selling price less return charges is less than 80 per cent of selling price, offer the article at 80 per cent of selling price.

"Authorize shipment of missing article, charges prepaid, making charge against the customer for the full price of the article.

"If it is the recorder's error, issue F 7883 and pass with the shipping authorities and the correspondence to the order department to charge the error as usual.

"If shipping department error, issue F 7238, attach F 7238 to shipping authority and pass to statistical department.

"Statistical department: Tally error and pass F 7238 with shipping authority to shipping department to note, detach F 7238 and return to shipping authority to file.

"Supposing the mail reader in the department where the customer's files, accounts, and records of shipment are kept, get an unindorsed freight bill and the following letter from a customer: 'In the last shipment I received 1 oil cloth rug, but I ordered 2 running yards of floor oilcloth M 198.' She turns to chapter 26 of the manual and analyzes the complaint thus: 'This is a new order. I have an unindorsed freight bill; the floor oilcloth which is a complete package is short. The substitution is our error. Therefore I must open cor., attach the shipping authority and order, and pass to the traffic correspondent.'"

OFFICE SCHOOL OF THE LARKIN CO.

The Larkin Co. provides instruction in four office departments as follows:

1. The detail department, where customers' files, accounts, and records of shipments are maintained.

2. The recording department, which initiates shipping authorities from customers' orders.

3. The routing department, in which orders are routed and billed for shipment.

4. The correspondence department, in which customers' inquiries and complaints are answered.

As the office manual of the Larkin Co. is too technical for a new and inexperienced employee, they are taught in classes where a special manual of graded lessons is used as a textbook. Groups of clerks are sent to the school mornings at hours when they can best be spared. Practice work supplements talks by officers of the company and written and oral examinations are given by trained teachers. The written papers are corrected and discussed with the class.

The correspondence class is taught the policy of the company in handling loss and damage claims, in adjusting complaints of delay or dissatisfaction and in answering inquiries. Salesmanship is taught in connection with letter writing and not only are grammatical construction, clearness, and conciseness taught but also clear enunciation, the use of the phonograph and methods of increasing the output. Each week a lecture is delivered on a related subject, i. e.: The policy of the company; the fundamental points of a letter; a good correspondent; how to help the transcriber; technical complaints; our special representatives; stove and clock complaints.

To understand the company's system of packing, loading, etc., the classes are taken around the factory so that they may see it actually done.

All sessions are conducted on the company's time. The time of training varies from one month to three months according to the position for which employees are being trained. During this time they spend the entire time in the school.

The school director is a professional teacher and his six women assistants are experienced employees who have shown proficiency in training new office employees.

As a stimulus to education and thought on matters outside the business proper, the Larkin Co. makes the following offers:

Employees who have attended public classes of instruction in educational subjects and have attained a standing of 75 per cent in work and 90 per cent in attendance, may secure from the company a refund of money spent for tuition and textbooks, materials and carfare. Mechanical drawing, bookkeeping, foreign languages and music are among subjects included in this offer.

The company will give a copy of any book or refund its cost to an employee who has read it twice and presented a brief synopsis of its contents. The synopsis must show thorough reading but need not have literary merit.

The Larkin library contains 1,800 books and 38 periodicals. It is open to employees at the noon intermission and books may be borrowed for two weeks.

THE OFFICE SCHOOL OF THE NATIONAL CLOAK & SUIT CO.

Perhaps the most highly developed office school is that of the National Cloak & Suit Co. of New York. This has more than 800 pupils with 10 trained instructors and three classrooms. The curriculum includes: Store system and policy, correspondence, filing, timekeeping, typewriting, complaint adjusting, penmanship and the use of the phonograph. Under general correspondence, business letter writing gets a good deal of attention and "ready-made" order writing, "made-to-measure" order writing, mail examining, etc., receive attention.

The employees are divided into three classes: First, the new employees; second, the old employees who need to perfect their knowledge; and third, the old employees who wish to learn a new subject. The third group includes those who are about ready for promotion. The classes average 35 in number. The sessions last one hour and a half to two hours a day.

A "plan and progress" book is used. On the left pages appears what is to be considered on each day and on the right is recorded the progress of each pupil each day.

Then there are textbooks which were compiled by the teachers with the cooperation of the heads of departments. These form the basis of instruction in the classroom. The final examination determines whether the pupil is fit for his work. The passing mark is 70 per cent. If a student does not pass, he goes over the course again.

The classes are in session from three to four weeks each. About half the time is spent out in the departments where the routine is examined, forms are studied, etc. The rest of the time is devoted to classroom discussions, explanations, and illustrations of the methods of work in practice. Each clerk is assigned to a department part of the time that he is attending the school sessions and here she can demonstrate by actual work that she understands what she is studying. Whatever is not understood is brought to class to be cleared up. This plan of dividing up the sessions by doing actual work has been found very satisfactory.

THE BASIS FOR PROMOTION.

The employees of the National Cloak & Suit Co. are anxious to attend the school. They all want to qualify for the positions ahead. The office routine is divided into 12 grades; each grade having three rates of salary. Before an employee can advance from one grade to another she must have obtained the maximum salary of the grade she is in and she must also have qualified for the next higher position by a passing mark in the school which prepares her for this position. There is a definite method of promotion and the employees understand what they must do to be ready for promotion.

A record of each employee is kept which shows the length of time spent in the school, the time devoted to training in each department, and the marks for the test of which there are three. Then there is a "history" card showing how many hours were required to teach each class, the attendance, and the average passing mark. This card is a guide for all later classes.

A series of standard salaries is based upon the number of points that each person is worth. A perfect correspondence file clerk must be able to file 1,000 pieces of correspondence a day; must not make more than four errors per file drawer, and must find one error made by another in each two drawers in his section. He gets the maximum salary. He gets this salary even if he drops to 95 points. Below that, it goes down by 5s until the 75 point mark is reached. This is the lowest point and it means that 750 pieces of correspondence must be filed a day, not more than 16 errors made in each drawer and 1 error made by another in every 3 drawers must be found.

OFFICE SCHOOL OF THE SIMONDS MANUFACTURING CO., OF FITCHBURG, MASS.

The Simonds Manufacturing Co. has provided an attractive class room with an office for the director of the educational work. Thirty can be accommodated in the classroom where illustrative literature, magazines, Government reports, technical books, maps, charts, and a museum are to be consulted.

The teaching is done by the director assisted by experts from all the departments of the organization. Some of the students occasionally prepare papers or talks. The office courses consist of:

1. Publicity (advertising): Studying ways and means to make the company's name and product known. Printed advertisements, types, and forms are studied and these include window displays, lectures, articles, circular letters, etc.

2. Business: Management, organization, accounting, banking, etc.

3. Selling: Principles of salesmanship, the steps in a sale, selling talk, the personal qualification of the salesman, etc.

4. Letter writing: Practical business English and correspondence.

A correspondence manual is issued which standardizes the letters that are sent out by the office. Copies of letters written by the office force are read over and criticized before the class or privately for the writer. An office manual which standardizes the office operations is in preparation.

Attendance at the classes is not compulsory. Some of them had 40 enrolled. Some of the men from the shops where saws, knives, files, etc., are made enter the office courses and some of the office employees enter the shop courses by special permission.

COOPERATION OF GENERAL ELECTRIC CO. OFFICE SCHOOLS WITH BOARD OF EDUCATION.

The General Electric Co., of Schenectady, N. Y., has entered into its second year of maintaining a vocational evening school for its office employees under the direction of the department of public instruction. Employees of 16 years or over may enter the classes of bookkeeping, business English, typewriting, and arithmetic. Classes in accountancy and business administration are open to those who are competent to enter and are familiar with elementary bookkeeping. A satisfactory examination or credentials approved by the general auditor of the company will admit them.

All students pay a registration fee of \$1, which is returned to those who have been in attendance 80 per cent of the time. Students buy their own books, but the company refunds the purchase price to those who qualify for the return of the registration fee. A deposit of \$2 is required from those taking accountancy and business administration which will be refunded at the end of the term if all printed text lectures have been returned.

The classes meet on four evenings a week from October until May. The hours are from 5.30 to 7 p. m.

OFFICE SCHOOLS A PROFITABLE INVESTMENT.

It has been found that the old method of taking an employee into an office and giving him a few vague directions verbally costs between \$50 and \$100, while the new method of training reduces this to \$20 or \$25.

The section head usually has to spend a great deal of time with the new employee and his verbal instructions are rather imperfect, because he can not keep in his head at any one time all the details which the newcomer must be taught. Neither can the latter understand all the instructions at once nor remember each detail. But as he must necessarily be left to work out his own salvation a good part of the time before he is fully prepared to go on alone, many costly errors are often the result.

In an office of 500 employees an average of 100 new employees is usually engaged during one year to take the place of those who resign or are dismissed. At the rate of \$50 per person for training them under the old method the total cost would be \$5,000 a year. If an instructor were employed at from \$1,500 to \$2,000 a year, there would be a saving of from \$3,000 to \$3,500. These are relative figures which would be smaller or larger if the business had a smaller or larger number of employees.

At the National Cloak & Suit Co. by training 800 employees the total output was increased 10 per cent, a matter of \$40,000 a year.

At the Curtis Publishing Co., Philadelphia, the efficiency of a group of trained office employees was increased 80 per cent in 5 months and that of another group was increased 100 per cent in 16 months. This means a saving of from \$4,000 to \$20,000 a year. The total saving in all the departments of this company by means of training, bonus system, and welfare work is approximately \$46,500 a year at a cost of \$5,000.

ACCOUNTING COURSES OF THE NEW YORK EDISON CO.

The New York Edison Co. has three courses in accounting, lasting one year each. The subject of the first year's course is "The practice of bookkeeping based on mercantile transactions." In this course the actual work of opening a set of books by single entry and double entry methods is done by the students. The general journal, purchase journal, sales journal, general ledger, cash book, and check book are used in real transactions and their correlation is explained. The proper construction and arrangement of trial balances, profit and loss statements and balance sheets are demonstrated.

The second year's course is called "Principles of accounting." The students are required to work out several complete and comprehensive series of transactions in the four types of organizations: Sole proprietorship, copartnership, the corporation, and the holding company.

The subject of the third year's course is "Public utility accounting." This covers the accounting methods of public utility corporations, such as street and interurban railroads, gas and electric light and power companies, and the accounting methods for steam railroads as prescribed by the Interstate Commerce Commission.

The first year course is open to all employees of the company. The second and third are open only to those who have received satisfactory marks in the previous year's work. Each course consists of lectures, classroom work, and written examinations covering these. The instructors are from the staff of the school of commerce, accounts, and finance of New York University.

EDUCATIONAL COURSES OF THE NATIONAL COMMERCIAL GAS ASSOCIATION.

Realizing that one of the first great economies in educational as well as social work is that gained through combination and cooperation, the National Commercial Gas Association has made an extensive attempt to standardize courses of study for the commercial men in the gas business. As this course of instruction is somewhat unique in the field of corporation school education, it may be of interest to state the conditions under which the course has been developed and to show somewhat in detail the nature of the work covered.

Six things should be noted in reference to the condition under which these courses of study have grown up: 1. The gas company is a quasi-public business organization. 2. The various business units where the city is taken as the basis are not in competition with each other. 3. The commercial activities consist of two kinds of product—gas and the appliances pertaining to its utilization. 4. The business units are of various sizes, ranging from the great gas companies of New York, Boston, Philadelphia, etc., to the small gas plant of some village in North Dakota. 5. The students vary in their preparation from college training to the man who left school when in the third grade. 6. These students are mature men and women.

As the gas company is a public utility organization the idea of service has predominated every lesson sent out. It was realized, too, that one of the great drawbacks which stands in the way of most corporations when considering the adoption of an educational scheme for its employees is fear that their competitors will get the benefit of their efforts by drawing the employee to the competing firm after he had received his instruction. However, it was soon decided that there is no real competition between the companies of different cities and that even if the employee changed about after his training from one company to another he would be a credit to the gas industry and before long this natural interchange of employees would become mutually beneficial.

In regard to the character of the product to be sold it must be noticed that the main product is the sale of gas and gas service, while the subsidiary products are the appliances through which service is rendered to the consumer. As the service rendered depends on the correct use of the right appliance the chief thing is to teach the correct use of these. However, during the first year salesmanship alone was taken up and during the second year the organization of the company in relation to salesmanship was considered. During the third year it was decided to give instruction in the construction and operation of gas appliances, keeping in mind the prime selling points connected with them.

Below are the subjects considered in the first three courses. During 10 months of the year one lesson a month was sent out to the students who were asked to write out the answers to quiz questions at the end of the text. These were sent to the main office of the association where they were criticized, rated, and sent back to the

student. The marks were kept on file and at the end of the year certificates were issued to those who completed the work satisfactorily.

Course I—Gas salesmanship:

1. The real salesman and the near salesman.
2. Practical and personal elements in selling gas.
3. Four steps in selling.
4. The customer's attitude toward a sale.
5. Building a selling talk.
6. Building a selling talk, continued.
7. Turning technical matter into selling points.
- 8, 9, and 10. Selling gas on a large scale for—1. Factory illumination. 2. The factory and the store. 3. Industrial purposes.

Course II—Salesmanship and organization:

1. The salesman and the corporation.
2. The sales department and the organization.
3. The basis of departmental organization.
4. Elements of gas manufacture for salesmen and commercial men.
5. What the commercial man should know of distribution.
6. Elements of gas accounting and purchasing.
7. Orders and dispatch.
8. Organization of the sales department.
9. Advertising and special campaigns.
10. Company policy and public relation.

Course III—Utilization of gas appliances:

1. Domestic cooking appliances.
2. Illuminating appliances—the production of light. Supplementary pamphlet: "Elementary principles of combustion and utilization of energy, units of light and illumination, and principles of light and distribution."
3. Illuminating appliances.
4. Circulating water heaters.
5. Instantaneous water heaters.
6. Hotel and restaurant appliances.
7. Street lighting.
8. House-heating appliances.
9. Miscellaneous appliances.
10. Principles of industrial fuel.

That the third course was very desirable from the point of view of the employee was shown by the fact that the enrollment increased from 1,000 to 4,000. Over 1,000 diplomas were issued to those who had completed the full year's work by getting passing marks on the written tests which were sent in each month.

THE NEW COURSE OF STUDY OF THE NATIONAL COMMERCIAL GAS ASSOCIATION.

A new and much more comprehensive course of study is being developed by the National Commercial Gas Association. It is to extend over three years, or less if the student is able to master it in less time. The first six months are devoted to the fundamental principles connected with the manufacture and distribution of gas and the generation and distribution of its chief competitor, electricity. Along with these lessons go textbooks covering the rudiments of arithmetic, mensuration, geometry, algebra, physics, electricity, magnetism, and chemistry. Practice problems are inserted in the text which the student is supposed to work out, and, besides, test questions are issued each month which are based on the text, and these are answered and sent into the office of the association where they are criticized, rated, and returned to the student.

Textbooks, called "reference papers," are to be frequently referred to in connection with other lessons. There is also a reference paper on business English which treats of the fundamentals of grammar. Each month a lesson pamphlet on business English is issued, and upon these lessons are based the monthly test questions. The business English deals with the choice, number, and arrangement of words in a sentence, while the grammar reference book gives the reasons for writing a correct sentence.

The following outline will indicate the material covered in the reference papers:

Arithmetic.—Addition, subtraction, multiplication, division, fractions, square root and cube root, and all such material as is necessary for the average gas man to make his computations.

Chemistry.—Chemical action, the various elements in some of their most important compounds and reactions in the manufacture and purification of gas. Thermochemistry, including the chemistry of flames, etc.

Physics.—Properties of matter, force, weight, velocity, energy, mechanics.

Physics.—Magnetism and electricity, including magnets, electrical charges, electrical currents, batteries, motors, dynamos, lamps, telephone, telegraph, and wireless.

Physics.—Heat, light, and sound.

Algebra.—The meaning and use of algebraic symbols; addition, subtraction, multiplication, division, fractions, and the practical application of these in gas computations.

Lesson pamphlets on business English.—Part I. The importance of legible penmanship, spelling, and capitalization, punctuation and abbreviation, the structure of the sentence, grammatical correctness in the sentence, the paragraph, the choice of words, accuracy in the choice of nouns, verbs, adjectives, and other parts of speech. Part II. The mechanical make-up of a business letter, complaint and adjustment letters, sales letters, follow-ups, etc.

After the general preliminary subjects have been mastered, there are five special technical courses from among which the student may choose. These are: 1. Industrial fuel and power. 2. Illumination. 3. General salesmanship. 4. Accounting. 5. Commercial management.

Some of the employees in certain companies are organized into classes which meet one or two hours a week for a reading and discussion of the lesson papers. A class leader is appointed from among the number of the class or from among the department heads. Occasionally extra lectures on allied subjects with stereopticon views are given. Some of the classes meet on the company's time; others in the evening after work.

EDUCATIONAL WORK OF THE NATIONAL ELECTRIC LIGHT ASSOCIATION.

Another new educational project is the new work of the National Electric Light Association. Lessons are to be sent each month to the employees all over the country who enroll for the course. There are to be 17 lessons on the following subjects: Salesmanship, selling campaigns, locating and following up prospects, advertising, merchandising, relations to customers, meters and metering, rates, illuminants, comparative costs, lighting practice, electric signs and display lighting, wiring, motors, steam, gas, and oil engines, isolated plants.

It is suggested that each company who has employees enrolled organize a class with a class leader appointed by the company who will preside at regular class meetings where each lesson is discussed.

THE NATIONAL ASSOCIATION OF CORPORATION SCHOOLS.

Realizing the importance of trained employees in the efficient management of their business, a number of corporations formed an association for the purpose of interchanging ideas so as to profit by knowing each other's successes and failures in regard to their systems of education.

A central office gathers information concerning all phases of industrial and commercial education which is arranged and classified. Bulletins are issued each month. These contain matters of interest on these topics.

An annual convention is held where the directors and teachers of corporation schools meet along with the general officers and employees of companies and interested outsiders in order to discuss the activities, needs, and accomplishments of the various corporation schools.

Questionnaires are sent out to the association members to find out just what is being done in the way of education. This material is compiled into a report which is presented by the committee in charge at the annual convention. It is hoped that courses of study may thus be compiled which will form a standard. The latest questionnaire is being sent out by the codification committee, but not enough replies have been sent in at the present time to form the basis for a report in this paper. It may be well, however, here to submit the questions to show what some of the problems of the corporation school are.

Questionnaire for the codification committee of the National Association of Corporation Schools:

1. What divisions of your business (factory or production, marketing, accounting, office work, and transportation) do your educational courses cover?

2. (a) Is enrollment optional or compulsory? (b) Are sessions held on company time or employees', or both? If the latter, state division.

3. Which courses are designed to teach trades or professions and which are designed to equip employees to render better service and to advance to higher positions in the company? How many are enrolled in your school?

4. (a) What percentage of your employees have completed your courses? (b) What percentage are now under instruction? (c) What percentage of those instructed are now in your employ?

5. Do you make an educational requirement or can any employee receive instruction through your company school?

6. (a) Are employees paid while receiving instruction? (b) How many hours of instruction a week, month, year?

7. (a) How is your educational department organized? (b) Is your instructor-in-charge a professional teacher? (c) Are his assistants employees or professional teachers?

8. Is the educational work of your company conducted in rooms provided by the company or is the work carried on through the public schools, high schools, Y. M. C. A., colleges or other educational institutions?

9. (a) Have you been able to secure satisfactory text books? If so, kindly send us sample set. (b) If you have found it desirable to prepare your own lesson sheets, kindly send us sample sets.

10. (a) Do you grant certificates to employees who complete their school work with satisfactory ratings? (b) Do you give any other form of reward? (c) Are employees' school records considered a basis for promotion?

Note: Kindly send complete curriculum for all courses, and if special courses are given covering such subjects as health, safety, etc., please give general outline and results secured. Also kindly state whether your company is giving attention to vocational guidance.

PROBLEMS OF THE CORPORATION SCHOOL.

Up to the present time schools for the production and marketing, i. e., the branch salesmanship, are much greater in number than those which teach office work and accounting. No corporation school with the exception of the railroad companies seem to teach transportation.

The question of the instructor is of great importance. Shall he be chosen from the business or from the profession of pedagogy? Sometimes an employee shows considerable ability as a teacher and in this case, as he knows the practical side of the business, he may be very successful in training the other employees. But an improvised teacher of this sort lacks an understanding of what teaching really means. On the other hand, a trained pedagogue is likely not to put sufficient emphasis on the commercial point of view.

The following points are of importance in solving the question as to where the corporation school instructor shall be chosen from:

1. He must have a broad vocational outlook.
2. He must have an understanding of the philosophy of education.
3. He must have ability to blend practice with educational discipline.
4. He must be a specialist in some phase or department of commerce.
5. He must have a general cultural background.

The question as to whether employees are to receive instruction in the company's time during the day or on their own time in the evening is another important consideration. It is not wise for young people to work eight hours or more a day and then be expected to spend several evenings a week in concentrated study. The indoor confinement during the day draws too much on their energy to expect further application at night. With adults this would be somewhat different, however. Many companies allow the employees to go to their school in the morning when they are fresh and pay them for this school time as well.

The matter of textbooks has not been definitely settled. Usually they are compiled in loose sheets as the class progresses. Sometimes manuals take the place of a textbook and sometimes the student is expected to take full notes on lectures.

DISCIPLINARY PHASES OF THE CORPORATION SCHOOL.

In planning the curriculum of a corporation schools several broad points must be kept in mind as follows:

1. In so far as a practical end is to be attained the courses of study must contribute to the attainment of that end.
2. The training resulting from the study of any particular subject will also be transferable to other subjects even distantly allied.
3. There is as much general mental discipline to be obtained from the commercial course of a corporation school as from a general academic course of study.
4. The development of power in some special subject rather than the inculcation of a mass of information and training and development rather than cramming should be the ideal.
5. Observation or active seeing—the power to note variations and differences—should be developed. The employee should be trained to become alert and quick in seeing details of the forms and procedures in business. Without the guidance and stimulus of habits of observation business practice soon gets one into a rut.
6. The judgment should be trained. In a broad sense, by judgment is meant the ability to see the particular in the light of the universal; i. e., to know how to apply general rules to particular facts and conditions. There are great opportunities to use the judgment in the corporation school, because here are the actual conditions which may be faced successfully by the application of the general to the particular.
7. It might be well for most companies to add to the curriculum of the commercial corporation school as it exists now a few subjects of general value such as commercial law, elementary economics, and the technique of commerce—the study of the conditions and arrangements which facilitate the exchange or transfer of goods. These do not yet receive enough general attention.

RELATION OF THE CORPORATION SCHOOL TO VOCATIONAL GUIDANCE.

Very few individuals use any real choice in taking up an employment or life work. Selection is usually a matter of circumstances or mere accident. Some manage to find the thing for which they are best suited in this haphazard way; many more, however, choose the wrong work, which mistake is often a serious handicap to the individual and a loss to the community, causing great economic waste and unhappiness.

The corporation school can exercise more or less selection. It deals with all degrees of ability, with the capable and promising, with the unfit and hopeless. Each individual has certain general characteristics which fit into certain general types of work. There is the type which takes the lead and naturally assumes responsibility, while another type evades all responsibility. The youth behind the counter waiting for business to come along may be far better adapted to canvassing large territories, seeking for prospects and searching for interviews where he must use his initiative. Another may be a good window dresser while his position gives him filing and clerical work, which he dislikes. Another person with the organization sense may be stunted by some minor position which will never develop into one requiring managerial ability.

Every worker should get more than a mere living out of his employment. He should get some sort of vocational development and discipline and also a certain pleasure in the doing of his work. This is what the corporation school is trying to give, and besides it is also able to carry on a sorting process, so that each person may do what he has a natural tendency to do.

The employee must have more responsibility put upon him. This can not be done until he is trained to meet this responsibility. He must have opportunities for initiative if he is to be a success.

RELATION OF THE CORPORATION SCHOOL TO SOCIAL UNREST.

While there is no general panacea for social unrest, it is generally conceded that education of a kind adjusted to the needs indicated by the study of present industrial conditions is the only ultimate solution. The results attained by the schools of some of the greatest corporations of the United States show that the corporation school is a factor to be reckoned with and that the needs of the corporations are going to influence very strongly our future educational development. It will ultimately be necessary for the schools to dovetail into the courses of the corporations. From them can be learned most definitely the needs of industry and commerce.

The great problem of the scarcity of skilled labor, one which demands the attention particularly of every corporation and business is at least beginning to be solved partially by the corporation school.

The principle of the democratization of industry—one of the great movements of to-day—will be developed by the corporation school, where it can be handled with the proper conservatism and the right point of view better than it can in any other way.

THE EDUCATIONAL WORK OF THE COMMERCIAL MUSEUM OF PHILADELPHIA.

By W. P. WILSON.

Director Commercial Museum of Philadelphia.

It is now more than 20 years since the Commercial Museum of Philadelphia was established.

At that time there was little attempt by the manufacturers of the United States to look to foreign countries for trade. The idea prevailed then that with a high pro-

protective tariff the home market was quite sufficient for all the manufacturing activities carried on in the United States.

External travel and intercourse between ourselves and foreign nations, the attractiveness of foreign products and the wonderful increase of our own manufacturing interests has dispelled this theory. Market conditions have changed throughout the world. It is now evident to all manufacturers that an export trade is not only desirable, but absolutely necessary.

With the great improvement of the Consular Service and its full use under the new Department of Commerce, a most magnificent work is now being done to stimulate the manufacturer to occupy broader fields. It is to be hoped that Congress will liberally respond to every demand of this efficient department to broaden its work.

The Commercial Museum came into existence in 1894, when the extension of our foreign markets was not appreciated.

At the close of the Chicago Exposition in 1893 the foreign countries exhibiting there were invited by the city of Philadelphia to donate their raw products to the Commercial Museum for the benefit of the American manufacturer. Many foreign countries, and especially those of Latin America, accepted this invitation. This material was immediately made available for the study and use of the American manufacturer. An active educational work was at once begun by the Commercial Museum. These products were described and exhibited for the benefit of home manufacturers.

The Commercial Museum organized itself as a semi city and State institution, with a board of leading business men, acting without compensation, organizing and pushing this work without profit, and with only such compensation as actually paid the clerical hire.

From this time on the Commercial Museum began a vigorous educational work to instruct the manufacturer, and induce him to turn some of his energy toward foreign markets. The gross ignorance of the general business man 25 years ago with reference to the trade in foreign countries and even the location of these countries can hardly be conceived. The following are a few such illustrations:

ILLUSTRATIONS COMING UNDER OBSERVATION OF MUSEUM.

A firm wrote to the Commercial Museum for the location of a certain city, saying that they thought it was in Norway, Sweden, or Denmark, or if not there it was probably in Scandinavia.

A manufacturer in Chicago wrote to a firm in Buenos Aires, saying that he would be in New York the following week, and suggested that his Buenos Aires correspondent run up to New York to meet him.

A manufacturer wrote to a Habana merchant who solicited his agency, saying that he had placed the agency for all Latin America in the hands of a firm in Manila, P. I.

A manufacturer in New York gave the sole agency for all South America to a firm in Bogota.

A manufacturer who was instructed to pack in a certain way to meet both transportation and tariff conditions, wrote that he had been packing his goods for 25 years, and did not need any instructions.

Dicken's Missionary Society, organized for the purpose of supplying flannel shirts and rubber boots to the poor benighted heathen in Central Africa, has its counterpart in the skate manufacturer who solicited trade in Colombia and Venezuela.

A manufacturer wrote to a Russian firm that, although he had no printed matter in the Russian language, he was sending him a catalogue in Spanish which he hoped would meet his requirements.

In order to be able to supply information required, the Commercial Museum sent its own men to China, Japan, India, Australia, New Zealand, throughout southern Africa, and to all the countries of Latin America, not once, but to some of them many times. This was done in order to become acquainted with the needs and conditions

of trade in these countries. It was also done to know more of the leading houses handling the business, and to gather such material, both raw and manufactured, as was customarily in use in these countries. In some of these nations it gathered samples of textiles, clothing, shoes, hats, and utensils, in order to show the manufacturer the kinds and patterns in common use.

FOREIGN CONGRESSES.

In order to make the foreigner more familiar with the necessities and conditions of the export and import trade of the United States, to fully discuss trade conditions of international interest, the Commercial Museum at this time organized and held two foreign commercial congresses. The first of these congresses was opened in 1897 by the late President McKinley, and attended by delegates invited through the State Department from all the Latin-American countries. The ministers of these respective countries, from Washington, attended as delegates.

The second of these congresses, held in 1899 in conjunction with the National Export Exposition, was attended by 300 foreign delegates from all quarters of the commercial world. These delegates were given the opportunity by free train and correspondence to learn much of the manufacturing and trade conditions of the United States.

The subjects presented and discussed at the sessions of these gatherings were educational and progressive in the highest degree. They were meant to bring the nations closer together in commercial relations and to remove as far as possible barriers of trade.

Uniform port regulations, international patent laws, uniform copyright and trademark laws, improved international postal laws, coast surveys and lighthouses for the improvement of navigation, and better cable communications for the more rapid transaction of international business were some of the subjects of papers read and discussed.

Since the sessions of these congresses two lines of educational work have been inaugurated and strenuously carried out by the Commercial Museum. The first, for the manufacturer and exporter, has been done under the organization of a foreign trade bureau. This foreign trade bureau has arduously labored to instruct the manufacturer as to the opportunities and conditions of foreign markets. This work has been pushed in all parts of the United States and with all the leading lines of manufacturers whose products could find normal and healthy sale in localities abroad.

This foreign trade bureau furnishes the manufacturer and exporter with necessary data on the following requirements and opportunities of foreign markets: Tariffs existing in different ports of entry; trade-mark and patent laws; consular regulations; shipping routes; required measurements; packing and all similar regulations relating to the invoicing and transportation of goods for foreign countries; methods of payment and the granting of credits; competition to be met in foreign markets, and, most important, reliable business houses in the leading trade sections of the world.

The bureau has accumulated a list of more than 350,000 foreign houses with information as to their importance in trade and their lines of business.

The foreign trade bureau assembles foreign trade documents of all kinds and conducts a free reference library of commerce and travel with over 78,000 volumes, with more than 400 foreign and domestic directories, with both city and trade official bulletins of every country publishing them, with consular reports from all countries which issue them and over 750 of the leading magazines, trade journals, and dailies, of which over one-half are from foreign countries. This library, up to date and current in all respects, is one of the main sources of information for the manufacturer. Its very complete list of foreign documents is made use of by a large corps of assistants for the direct benefit of exporting firms. It gives them the help they are constantly requiring.

An able corps of translators is maintained for the benefit of the American exporters for the translation of letters from foreign firms and replies to them. All the known cable codes are kept for the convenience of the business man. A special bureau for the tariff schedules of all countries is maintained and kept up to date by an expert in tariff questions. As previously mentioned, this work for the exporter is done without profit but at actual cost of investigation and compilation.

The necessity which has developed for an increased oversea trade has led to a much stronger demand for a more universal knowledge of the geography, the products, the climatic conditions, and the industries of foreign countries as well as the habits and customs of their people. It has seemed that something could be done to supplement our common school and educational systems with the addition of this necessary knowledge.

About 15 years ago the Commercial Museum made up a collection of products which contained the chief materials entering into the bulk of domestic and foreign commerce. This collection was supplemented by maps showing distribution, photographs with methods of cultivation and manufacture and a publication discussing the commercial raw materials of the world.

This collection was subjected to wise and thoughtful teachers who felt the need of more knowledge concerning the geography and materials of commerce and with various revisions is now being placed in many thousands of the schools of the State of Pennsylvania, under an appropriation made at each successive meeting of the State legislature.

The collection is sent out in two forms, one placed in wall cases built by the respective schools which receive it, and in cabinets with glass-covered drawers requiring no preparation on the part of the school receiving them. (These methods will be illustrated by lantern slides.)

Over and above the work of distributing collections which shall illustrate the commerce and geography of the world, a complete system of lecture work has been inaugurated and carried out throughout the entire State of Pennsylvania.

1. Methods and organization of this work in the city of Philadelphia.

PHILADELPHIA.

For all schools, from the fourth to the highest grades, special series of lectures have been arranged in the museum lecture hall to supplement, in geography and commerce, the material already given in the school courses.

After the pupils of a school have received their instruction on a given country, such as Japan, the West Indies, or Argentina, the teacher arranges with the curator of the Commercial Museum for an illustrated lecture on the country studied. The geography, the products, the activities, habits and customs of the people illustrated in the cities and throughout the country are fully set forth in colored lantern slides and moving pictures, after which the pupils are taken in groups by competent persons into the collections in the Commercial Museum, and from one to two hours spent in pointing out and illustrating visually what has been touched upon in the lecture.

The collections are thus used as a laboratory for the latest study of the country. About 50 different foreign countries have collections in the museum. If the lecture were on Japan, there are fully 6,000 square feet of space covered by material from Japan. If it were on China, fully 8,000 square feet are taken up by the collection from China. If on Brazil or the Argentina fully 4,000 square feet of space has been devoted to each of these countries, illustrating their agriculture, mining, forestry, and other products, and the customs of the people. These lectures cover a broad diversity of subjects, not by any means limited to the common schools. The manual training schools, the technical schools, and the schools of commerce and finance from the different universities take their part in attending lectures adapted to the lines of their work.

Such subjects as cotton, its by-products and its importance in commerce; carbon and its by-products; the production and importance of rubber in the industries of the world; conservation; methods of securing foreign trade, or the application of the tariff to our economic system, are subjects often given by request in the lecture room of the museum.

For illustrative material the Commercial Museum has collected over 35,000 photographs from all quarters of the globe and is accumulating an immense collection of moving-picture films illustrating many of the leading processes of manufacture, and the habits and customs of peoples throughout the world. It is not dependent upon others for this material, but sends its own experts with moving-picture apparatus to gather up the industries wherever required.

During the last year 35,000 pupils and students from the schools of Philadelphia and the universities and colleges of New York and Pennsylvania were instructed in its lecture courses. Besides this, it maintains a free course of lectures on Saturdays throughout the school year, open only to adults. The subjects of these lectures are in general along lines of commerce and geography.

2. Methods and organization of lecture work throughout the State of Pennsylvania.

EDUCATIONAL WORK IN THE STATE.

About 10 years ago the Commercial Museum began a system of loan lecture work intended mostly for the ungraded rural schools throughout the State. The lectures were written up plainly and carefully in simple language, and fully illustrated with colored lantern slides. The slides were numbered and so connected with the paragraphed typewritten lecture that any intelligent teacher, without having previously studied the subject, could readily read and illustrate the lecture. With the lecture was sent the lantern, the screen, and the method of lighting adapted to the school.

The subjects of the lectures were on the climate, the geography, the inhabitants, and products of countries, also important products and industries treated alone, conservation of our forests and resources, all simplified for the understanding of younger children. These lectures with all the necessary appliances are free to the schools, with the exception of the expressage to and from them, which is paid by the school. Seventy-five thousand pupils during the last year have listened to these lectures.

The distribution of collections and lectures throughout the city of Philadelphia and the State of Pennsylvania has been carried on by appropriations from the State legislature. This work has been entirely experimental with an attempt to supply what the teachers seem to have desired. We have had many conferences with able teachers and have often modified our work in accordance with their suggestions.

The Commercial Museum, up to this time the only one in the United States, was organized on quite different lines from museums in Germany, Belgium, or Austria. It has been from the very first very active in procuring large exhibits which would illustrate the manufactures, and largely the raw products, from all foreign countries. It has installed and maintained these exhibits without any cost or compensation from the countries furnishing them. These foreign exhibits are a living advertisement of materials which may be imported into the United States from these countries. The Commercial Museum is anxious that all the countries of the world should be well represented. It urges the nations, already with large collections, to keep them fresh with new supplies. Such products are placed before manufacturers wherever they can be used to the advantage of the country presenting them.

While Pennsylvania is the only State supporting such a system of education as described, at least three other States have considered the matter and are likely to follow somewhat in her footsteps.

So far as the educational collections are concerned, quite a number of countries, including Mexico, Japan, China, and Argentina have asked for and received these

collections in order to study them as examples which they may desire to follow out more or less closely in their own systems of school work.

One country, that of Japan, organized the Imperial Commercial Museum at Tokio quite after our methods more than 10 years ago, and since that time has created somewhat similar institutions in four other cities. Three other countries, including Germany, have studied the methods and begun to take steps for work along somewhat similar lines. We shall be glad always to encourage any and every foreign or domestic effort to organize such work as we are attempting and will cooperate with such organizations to the fullest extent, through the exchange of information.

The museum has always answered with great freedom and without charge all kinds of inquiries coming from foreign governments, chambers of commerce, or private firms and individuals. It has spared no pains in bringing together foreign and American houses. It cordially invites visitors of whatever interest or country to make headquarters at its buildings.

While we are primarily working in the interest of the American manufacturer in his efforts to develop foreign business, we are quite as zealous in protecting the foreign merchant who comes to this market to buy, and are always ready to aid him in securing such information as he may desire.

In summing up the work of this institution, the principle for which the Commercial Museum has always stood in its work from the very beginning has been reciprocity. It has worked to increase the trade of the United States with foreign countries and equally to increase the trade of foreign countries with the United States. Ships must be loaded both ways in healthy commerce.

COMMERCIAL EDUCATION: EFFORTS OF THE NATIONAL CITY BANK OF NEW YORK.

By F. C. SCHWEDTMAN.

Educational Director The National City Bank.

The nations associated in the Pan American Congress have many characteristics in common; they live in the same hemisphere, maintain the same form of government, and, compared with European countries, are still but young. Alike in these respects, they resemble one another also in their requirements, one of which, a knowledge of their respective commercial problems, is most essential for the growth of a closer friendship and a more profitable intercourse. The subject of commercial education, therefore, with special reference to the needs of North, Central, and South America, is one of the highest importance to every member of this congress.

The guiding spirits of The National City Bank have encouraged commercial education for many years. The arguments which Mr. Frank A. Vanderlip, president of the institution, advanced more than ten years ago in favor of vocational training in general, and of scientific commercial education in particular, will go down into history as epoch making. His recommendations of that early period stand even to-day as the only sound foundation for efficient cooperation between the college and the commercial office—a cooperation without which no system of commercial education is of any practical value. Either the shop must be brought to the school, or the school to the shop; theory and practice must go hand in hand. Theory without practice becomes tiresome and lifeless, while practice without theory is unsound and inefficient. These principles apply both to national and international commerce, but I shall deal more particularly with the international side of the question, because this congress is especially interested in that field.

The enactment of The Federal reserve act enabled The National City Bank to put into operation some of its preconceived plans for the promotion of international commerce, and the countries of Central and South America were selected as furnishing the most desirable field for a practical demonstration. A careful and detailed analysis of the problems confronting us in these countries made it certain that commercial education of the broadest kind was required for the training of proper assistants. A better understanding of the whole subject on the part of bankers, manufacturers, and merchants, and the education of our legislators and of the public in general, are necessary for success in international commerce. All the forces of the nation must know the part they must take in solving the problems of international commerce; all the forces of the nation must act in more perfect harmony and in closer cooperation with one another, if we are to succeed.

Although The National City Bank is a financial, not a mercantile or a manufacturing, institution, it recognized that successful international banking is possible only when closely related to industry and commerce. Moreover, industry and commerce, as represented by American manufacturers and merchants, learned long ago from practical experience that success in international trade is impossible without American branch banks. We entered the South American field with such banks at a period of intense commercial competition with European nations. Difficult as was our task at the beginning, it was soon made immeasurably more so by the almost simultaneous outbreak of the present deplorable war.

One of the vice presidents of The National City Bank, Mr. William S. Kies, together with a large corps of trained commercial experts, has devoted more than a year and a half to the development of industrial and commercial relations between the United States and South America. Almost the entire time and energy of this corps of workers have been given to developing a system of commercial education of the broadest and most practical kind. These educational efforts may be summarized as follows:

(a) The best experts obtainable were sent to the various Central and South American countries to make careful observations at the different trade centers. As a result these investigators gathered a wealth of information upon many subjects, the most important of which were: The kind and quality of import and export products, the manner of buying and selling, questions of packing and shipping, customs duties, and especially credits.

(b) This kind of information is kept up to date and added to by commercial attachés whom The National City Bank places at each of its branch banks. There are six of these at the present time, located as follows: Buenos Aires, Argentina; Montevideo, Uruguay; Rio de Janeiro, Brazil; Santos, Brazil; Sao Paulo, Brazil; and Habana, Cuba.

(c) Special systems of acceptances and dollar credits were designed by financial experts of the bank for the purpose of better meeting the needs of international trade between North and South America.

(d) Mr. Vanderlip, Mr. Kies, Mr. Eldridge, and other important officials of the bank have devoted much of their time to the public expounding of the importance of international trade in general and of South American trade in particular.

(e) A special magazine, "The Americas," has been established and is being maintained for the purpose of promoting commerce and good will between the nations of America. This magazine is mailed monthly, free of charge, to the customers and friends of the bank. Nine-tenths of "The Americas" is devoted to commercial education, and an important feature of the publication is a list of actual trade opportunities.

(f) Special classes have been established and are being maintained at The National City Bank for the purpose of educating additional foreign banking and trade experts. A selected number of graduates from America's best universities is being trained in

the essential foreign-trade requirements. The class work includes a study of the history of South America, the customs of its people, and a daily conversational study of the Spanish and Portuguese languages.

(g) An employment office is maintained, where men suited for foreign commerce and those requiring such men are brought together.

(h) The foreign trade department of The National City Bank serves as the headquarters for all the activities mentioned. To this headquarters anyone interested in any phase of foreign commerce can go to obtain advice and assistance.

(i) As one of the most important features of international trade, credit information regarding Central and South American merchants is carefully compiled. All such information which any department of the bank can provide is given entirely free of charge to customers of the bank, and in part is also furnished free to noncustomers.

While the whole educational campaign is more or less a business proposition, the thought of building a monument of patriotism and of national enterprise is one of the strongest incentives in the minds of the officers of The National City Bank in this whole endeavor. The United States is now one of the greatest powers in international commerce, and that it may continue to grow in importance until it assumes and retains its rightful place as commercial leader of the world, is an ambition the attainment of which is well worthy of the sincere efforts of every patriotic citizen.

The last 18 months have materially changed the relation of all the Americas to the rest of the world. European nations which heretofore supplied Central and South America with money for their development, and with manufactured products for the needs of their people, are at present compelled to husband their own resources. On the other hand, the flow of products of South American field, forest, and mine, which formerly were absorbed or trafficked in by Europe, is stopped to a large extent. A period of commercial readjustment is at hand. The United States of North America is, temporarily at least, the financial and commercial center of the world; and if the people of North and South America study their lessons in commercial education well, the United States will from now on supply most of the gold and the manufactured articles for Central and South America, and in return will consume or handle their coffee, rubber, hard wood, fruit, cattle, wheat, and minerals.

Commercial education is required to bring about this desirable end, and it must be more than college training. We must train many of our best young men for foreign commercial service. We must be as thorough in our training of these men as European nations have been; the college and the business office must cooperate efficiently. The trained young men of North America, after adequate preparation, must be willing to make Central and South America their home for many years; they must know the languages of the countries, and they must go with an open mind and a broad spirit. There has been a disposition in the past on the part of some North Americans to consider our ways, our wares, and our judgments superior to those of the nations they visit. We have been a buying nation for so long that it is difficult for us to assume the right attitude of a selling nation. Our banking must be developed as far as possible in accordance with the customs and needs of South America; our manufacturers must learn to make what is wanted and ordered, not what they consider best or what they believe may be substituted; our shippers must learn to pack and to ship strictly in accordance with instructions; in fact, our whole Nation must be educated to the understanding that satisfactory international commerce means give and take, live and let live. We can not hope to sell our manufactured wares to South America unless we are willing to furnish a fair share of the capital required to develop South America.

Manufacturers and bankers must be educated to cooperate toward that end. Our legislators need to learn that Government cooperation, instead of opposition, in international trade is a good national policy. Our voters need to learn to elect to public office statesmen who are ambitious to build up a united Nation, not politicians eager

only to build up machines for personal gains. All the nations must be educated to a better understanding of the sound principles that underlie equitable international relations. Efficient foreign commerce demands an American merchant marine, operated under laws which allow it to compete with the ships of other nations; it requires tariff laws framed upon the difference in cost of labor here and abroad, and administered to maintain the higher standards of living of American workmen. Our manufacturers and workmen must be educated to a realization of the importance of fair dealing with each other and with the public, so that social and industrial unrest, which have increased alarmingly in recent years, may be replaced by mutual confidence and good will. All the people must learn that differences and grievances can be much more readily adjusted by conferences than by hostile demonstrations. The laws of North and South America need to be carefully studied by experts, so that by efficient combination public interest may be furthered.

We all need to be educated to a greater effort toward unanimity of purpose for the attainment of objects needed by all. There should be fewer distractions and less loss of creative energy through an inability to remain steadfast to principles for common good. The Pan American Scientific Congress can become a strong factor in bringing about these ends. If the delegates assembled here will work unitedly and practically for a better understanding of commercial relations between North and Central and South America, in the directions outlined in this paper, they will build a proud monument to Pan Americanism, a monument which will not only stand for closer commercial relations, but for peace, happiness, and prosperity to all the nations bound together in the Pan American Union.

INDUSTRIAL EDUCATION AND THE USES OF THE CINEMATOGRAPH IN PUBLIC INSTRUCTION.

By FRANCIS HOLLEY,

Founder and Director of the Bureau of Commercial Economics.

I have been requested by the distinguished director of the Pan American Union to address you upon the object and work of the Bureau of Commercial Economics.

I hesitate to do this because I have been charged with being its founder, and, to speak of one's own, partakes of immodesty. However, acquiescing reluctantly, the Bureau of Commercial Economics is located in Washington, and is an institution which shows by the graphic method of motion pictures how things in common use are made and produced, and from what sources the raw material is obtained, and under what conditions labor is called upon to serve in their production.

It is an institution that has been organized under the general educational law; it has no capital stock; it is not operated for profit, and has been affiliated with one hundred and six of the universities and colleges of the country, including nearly all of our State universities. It shows, for instance, in motion pictures, sheep ranging on the foothills and on the plains in both America and in Australia. It shows the care and protection of these sheep, the treatment for disease, the dipping and washing and shearing, and then it follows the bale of wool to the making of cloth and clothing of every description. It shows the taking of the hides and the various processes of tanning; the old method and the new, and the making of shoes and gloves. The films then recur to the flesh of the animal and show, in motion pictures, furnished by the great packing houses, the various processes of making it fit for the table, and the final disposition of the by-products.

The cattle and hog industry is treated likewise.

The films show the making of glassware of every description, from sand; the making of every kind of pottery and china from clay; the mining of gold and silver, copper,

tin, lead, zinc, and coal, showing and depicting clearly upon the screen the conditions under which miners work many hundred feet below the surface of the earth. The films show the making of all classes of linen garments, from the planting of the flax, and all sorts of cotton garments from the planting and harvesting of the cotton; the raising of rice and sugar-cane, and the treatment of the sugar-cane until we find it on the table. We show the making, with motion pictures, of the usual silverware with which we come in conflict three times a day, also all classes of canned goods, from the production of the vegetables in the garden and on the truck farms until they are prepared for our use at the hearthstone. We show on the films the cutting of timber and follow each piece to the making of furniture, and then we recur to such not available for that purpose and show the making of wood pulp and paper. We show the harvesting of hemp and the making of cordage; the making of lace and carpets and rugs; the production of oil cloth and linoleum.

The films of the bureau depict the making of all classes of electrical equipment, from the crude metal until we find it in the chandeliers and on the library table. The films show the production of turpentine and creosote and their uses. The films also show the making of antitoxines and vaccines and various types of drugs and medicines which are used in every-day life in the preservation of the public health. The films of the bureau include a series showing the action and reaction in chemistry, analytical, industrial and commercial, in the making and production of commercial fertilizers and dyestuffs, and the like, and also a complete series in road-building, from the clearing of the right of way by the safe and sane methods of dynamite, and with the use of tractors, and then the introduction of the asphalt system, concrete system, the tarvia system, and finally, by the old-fashion turnpike and macadam system. It is not the policy of the bureau to express any preference but simply impart information showing all the processes and let the highway commissioners and public elect. The bureau is in constant receipt of requests from city officials and county commissioners for films of good road-building, to the end that they may determine on a bond issue.

The films disclose the method of grafting of fruit trees and the budding of plants and trees, and with the microscope with a clock attachment and with a motion picture camera, we show the germination of seed and plant life, from the time it is planted until the flower or fruit is produced.

We show medical films as well, depicting the grafting of a bone in the leg; the removal of a goiter on the neck; the removal of the appendix, and, with the X-ray, the action of the heart and the lungs, and of the stomach and various other functions of the human body, and these films are intended for the use of medical societies and in clinics of medical colleges. The medical films, however, are not shown until they have been passed upon by an accredited medical society. The films disclose the making of saws from crude metal; the making of edge tools of all kinds, even to the tipping with vanadium. The films disclose the making of armor plate; the production of structural steel and steel rails, from the mining of the iron ore.

One of the most interesting of the films which the bureau has to display is the production of a watch, from the crude metal. The films depict the making of every part of a watch, including the making of the main spring and the installation of every part, and show its functioning upon the screen complete, the making of the dial and baking it, and the production of the watch case and the watch chain, and finally the taking of time from the stars.

The silk industry is clearly shown, and we see under the microscope the hatching of the silk worm and later his little body busy with his little task, making something he knows not of for the adornment and gratification of our dear ones at home. And, again, the films depict the making of the felt hat, commencing with the life of the beaver and the coney and the nutria in their native haunts, and, at the opportune time, the sacrifice of their little lives to cover a nation. And we show the making

of varnish that we may enjoy the gloss of tomorrow and the making of buttons from bones and other things; the gathering of rubber and the making of pens and tires, and the pumping of oil, its treatment, transportation, and uses. The engraving and printing of bonds and securities and the surveying and construction of railways and railway equipment; the printing and binding of books and magazines, and the manufacture and uses of fibre of all types; the production of roofing material from old rags and the operation of machinery in our city laundry; the care with which milk is obtained from the modern dairy and the sterilization and pasteurization of it as a protection to the public health and the production of canned milk and other products of the dairy, including the creameries.

In addition to the industrial films which the bureau has in circulation, there is a vast quantity in the series of travelogues. We have travelogues on all of the national parks of the United States and Canada, and I will briefly outline one of these, which is entitled "Half around the world."

Now, if I may, I will invite you to join me in one of our travelogue series, and we will start from Perth and Freemantle in Australia and traverse the great commonwealth, reaching Adelaide, Brisbane, Sydney, and Melbourne, and in our trip visit the coal mines, iron mines, and gold mines of that vast dominion, and see the largest herds of sheep in the world on the foothills and plains of that great southern island. We will embark from Sydney enroute to America, stopping at the Fiji Islands, where we notice the natives in their native dances, and all of the various industries, and their method of living, and their method of livelihood, and see them as they are in the natural state. We again embark and find ourselves at Guam, where Uncle Sam exercises jurisdiction, and thence to Hawaii, where we inspect the industries of the raising and canning of pineapples and grapefruits, and all of the various industries from which those good people gain a livelihood.

We will look over the welfare work in behalf of the unfortunate lepers and see the great development which has followed America's annexation. We then rejoin our ship and make our way into the beautiful harbor of Victoria, seeing as we approach the magnificent Parliament buildings and the activities of that typical foreign city, beyond which is Esquimault, the greatest graving dock in the world. We inspect the mines and the lumber industries of Vancouver Island, and wend our way among the islands of Puget Sound to the mouth of the Frazier River, where we enter the harbor of Vancouver. We see in the distance as we approach one of the most wonderful parks in the world, Stanley Park, just as God made it, and on the heights beyond, the residential city known as Shaunessey Heights. We then look over the vast salmon cannery plants which line both banks of the Frazier River, where the larger per cent of salmon is canned for American and European use than in any other section of the country. We witness the great mills engaged in the lumber industry and the mechanism and electrical appliances which make it possible to handle those vast redwood trees.

We then take the train for 800 miles through the beautiful Rockies, following the trail of the Frazier River to its source, and then into the beautiful valley of the Illicellewat, which we traverse until we come to the Great Divide, where we come into the valley of the Bow River, visiting Field, Glacier, Lake Louise, and Banff Springs, and look over into the Yoho Valley to see what nature has done to beautify that great national park.

We coast down to Calgary, the capital of the far middle west, where the great marts for the sale of cattle and horses are operated by corporations with millions of capital. As we journey to the eastward we see the great Bow River reclamation plants, the great irrigation dam which rounds up and holds for future use the outpouring of the mountains of the eastern slope. We pass on through Saskatchewan into Manitoba, where we find the vast wheat areas and inspect the enormous railroad elevators containing millions of bushels of wheat which find their way into the great mills of Washburn and Pillsbury, thence to the public to feed a great nation.

On reaching Winnipeg we find one of the capitals of the great west, a thriving, magnificent city engaged in all lines of industry, and many of these industries are branches of some of the great American organizations which have gone to Canada to produce their wares in order to save the arbitrary duty which is imposed for the protection of Canadian industries.

We pass on into the Rainy Lake country, along the Lake of the Woods, where the mining industry is carried on so successfully and where vast quantities of iron and copper feed our commonwealth, and then to Port Arthur and Fort William, on Lake Superior, and look over the enormous dockage and the great elevators there, rich with cargo waiting to be carried to an expectant public, and so on into the Province of Ontario, where the seeds of the world are grown. Passing thence through the Muskoka Lake country into the districts where iron is produced in vast quantities, and then we approach the capital of the Dominion and see Ottawa under the most favorable conditions, including the magnificent Parliament building and Chateau Laurier. Thence we hurry on to Montreal, the great commercial center of Canada, and inspect carefully all the vast industries and shipping of that port. We view the great vista down the St. Lawrence from Mount Royal and see that great highway to the sea dotted with shipping and commerce, carrying the products of the Canadian northwest to the fatherland and to the Far East, who depend upon it for its supply of foodstuffs to such an extent.

We cross the St. Lawrence River and traverse the Province of New Brunswick until we reach Moncton and St. Johns, where we see the tide of the Bay of Funday rise 60 feet and witness the reversible fall. We then pass to Cape Breton Island and see the coal industry of that little island to the northeast, and at Cape Canso we watch the relaying of land-line telegrams to the trans-Atlantic cables. We then cross to Newfoundland and inspect the cod fisheries, the lumber industries, and the making of wood pulp; and finally we find ourselves at St. Anthony, where Dr. Grenfell is ministering to the unfortunate Esquimaux, while his little wife is teaching the native woman to make artificial flowers which are being sold throughout the world.

We then go aboard the great trans-Atlantic liners, inspecting them from top to bottom, from the captain's bridge to the stokehole, and finally find ourselves entering the Mersey and landing at Riverside, in Liverpool.

This travelogue is one of a vast series which the bureau has to display, for in addition to this series, we have one from Prince Rupert to Quebec, and all of the trans-continental lines, from the Canadian border to the Mexican border, so that we may show to the people who come within the zone of our activities all that is worth knowing of our great American Continent from actual contact with the pictures, made with a camera for the sole purpose of imparting instruction and opening opportunity and developing initiative for the youth of the land.

In our collection, which is being made for us now by the Canadian Government, we will be able to show the seal and fur industries along the Arctic, and the apple industry of the Province of Ontario; and we are in receipt of all of the films of the Commonwealth of Australia, which have been intrusted to us for use in our crusade for public instruction.

We also have the films of the Republic of Bolivia, and shall, within the near future, have those from Argentina, to put in our collection, showing the trans-Andean lines and all of the activities in stock raising in the great pampas of Argentina, and with these we shall be able to compare the methods of Australia, the United States, Canada, and the Argentina, and to hope that by comparison each will learn how to improve the zone of his activities and add to the revenue derived from such activity.

The work of the bureau is given in the various State universities with appropriations provided by the legislatures of the several States to encourage extension work, and these universities show the films in all of the cities and towns of their several States, in their extension work, to adults at night, and in many instances in missions and other organizations which may be benefited by their display.

The films of the bureau are also shown on the request of the State library commissions in public libraries of many States, and they will be shown on application in the museums of arts and sciences and in the historical and geographic societies, and, in fact, they will ever follow a request to show the work of this bureau in every center that it is possible to reach.

The work of the bureau is also carried on before the chambers of commerce, boards of trade, and commercial bodies, and fraternal organizations, and in the summer time they are given in the parks and playgrounds of the various cities; the experience in Cincinnati, St. Louis, and Pittsburgh, this year, indicates a great interest by the general public in this line of effort.

When the films of the bureau are shown in public parks and in inclement weather in the State armories or in the public libraries, it is desirable to have the cooperation of volunteers from the Boy Scouts and to instruct them that it is their duty not only to seat the audience and preserve order, but be able to answer questions of the audience about the subject shown on the screen. This not only develops initiative in the Scouts, but makes them keen to know the films of American industries without being conscious that they are acquiring information; they often ask for rehearsals in order to acquire this knowledge.

Many of the larger industries are developing welfare work for their employees and their families in recreation grounds and forums. In many instances thousands are given these benefits, and the number is constantly on the increase. They provide auditoriums and motion-picture machines and operators that their people may have the privilege of seeing the films of the bureau.

The bureau has offered its services to Secretary Garrison and Secretary Daniels to display films of the War and Navy Departments to a million people a month in an effort to encourage recruiting in defense of the Nation, but insists that such films shall be in all things truthful and show every phase of Army and Navy life, the drudgery as well as the pleasures, so that all may see and know all conditions, thus qualifying them to elect.

The bureau is clearly of the opinion that parents will consent to enlistment if they are convinced that welfare and educational work is engaged in. To that end the bureau will supply at all Army posts and upon shipboard films in series of related subjects as complete in their make-up as those to-day given in the great American universities as a required course to the students fortunate enough to afford collegiate training.

One of the centers which appeals most to the bureau is its work among the very poor, among those who are deprived of all that seems to be dear in life, and whose life seems to be hopeless, so far as anything of interest is concerned.

We seek to give our films to these people at every opportunity, and in all institutions where they are gathered, and in the convalescent wards of the great hospitals of the country and in the prisons where we have been giving our films every week for over a year.

We also give our films in the east-side sections in the city of New York, in the congested sections where the sweatshops prevail, where people work under the most unwholesome conditions, and in these centers we show films of the making of the same line of garments that they are engaged in producing, and in institutions where welfare work is given, where light and heat prevail, where ventilation and sanitary conditions are taken into account. By the display of these pictures in those centers, we have forced the manufacturers either to allow these people to desert and go to new fields of effort more congenial and more satisfying or else they are required to enlarge their area of space and introduce ventilation and light where darkness has hitherto been prevalent.

No film is shown for money. If it is clearly educational, divested of all advertising, and shows a process, it will be displayed free of expense to the producer. It, however, carries a credit line, simply giving the name of the donor.

No film is shown where any admission charge is made to the public. It must be as free as the air we breathe, that all may see and learn through the medium of motion pictures how the things that they meet in everyday life are made, and under what conditions labor works and serves in their production.

The bureau is conducting at this time an exhaustive investigation as to the effect of motion pictures upon the eyes for the purpose of determining if there is any impairment of sight and the nature of it if any.

Many films are offered which the bureau will not display. The bureau will under no circumstances show any film of an industry where due consideration is not clearly shown to employees or where children are employed under oppressive and unwholesome conditions. The bureau will under no circumstances show a film or production of foodstuffs where the pure-food laws are not strictly complied with, or where any chemicals or other injurious drugs are used which may be deleterious to the public health. The bureau does not display any film dealing with the production of liquor or intoxicants of any nature, nor does it show any film of the making of cigarettes or the products of tobacco. It will illustrate only the raising of tobacco as one of the staple products of the Nation. No films will be shown of the actual taking of life of any domestic animal, either for scientific research or for foodstuffs. The subjects, however, are fully covered with this exception. No film will be displayed which is untruthful or misleading, or which awakens hope of opportunity where none exists. The work of the bureau is perpetuated through the election of its directing offices by an advisory council composed of college presidents and men of international distinction in science and letters. The bureau is maintained through contributions and annuities. Contributions are invariably voluntary, and no one is authorized to solicit the same. The surplus funds of the bureau will be used in the production of welfare films, first aid to the injured, including the resuscitation of the drowning and the emergency methods of rescue of imprisoned miners, and the awakening and development of civic pride and patriotic American citizenship.

At no distant date we shall be called upon to extend the hands of friendship and fellowship to our unfortunate brothers and sisters of other lands, those bereft of dear ones in the great warfare now in progress in continental Europe—those unfortunates who will be tax-ridden to the point of destruction and desperation and will seek a home in this land of plenty and under our flag of freedom and liberty.

The Bureau of Commercial Economics will greet them at the threshold and lead them to homes of opportunity showing them in motion pictures, films of the great American industries and the care and welfare work so manifestly apparent in so many of our workshops. This, to those who seek employment in the industrial world; and then again, with films of agriculture we shall lead back to the land those who have tilled the soil under other flags and know no other means or methods of livelihood. To them we shall show all the opportunities awaiting development in every State in the Union and under every climatic condition.

The bureau has in the process of the making a series of pictures showing what it means to be a citizen of this grand Republic; what responsibility is imposed upon the citizen, and what obligations he has assumed in coming to the new home of his adoption; why he votes, and whom he votes for, and what the man does whom he elects, and how his acts affect him in his everyday life.

The films will convince him of the sacredness of the ballot and the sanctity of the right of suffrage.

Our adopted cousins will have no time to study our language or read our history in his desperate effort to protect and nourish his own. We must teach him in the universal language what it all means to him, and must guard and ever protect his line of vision in correct and wholesome thought and action.

Adjournment.

GENERAL SESSION OF SECTION IV.

NEW WILLARD HOTEL,
Wednesday morning, January 5, 1916.

Chairmen, Philander P. Claxton and Ernesto Nelson.

The session was called to order at 9.30 o'clock by Chairman Claxton.

The CHAIRMAN. I will state that in making up the preliminary program of Section IV of this Pan American Scientific Congress I prepared a list of questions which were intended to have a meaning for all of the American Republics. Certain conditions exist in all of the Republics—certain common ideals and aspirations. I tried to outline some of these in a very brief address at the first meeting of this section on Tuesday of last week. I said then that we were all new countries—our population made up of peoples largely from Europe that have come to these various countries as immigrants, finding here a new home. We all have very large resources of field and forest, of mines and water power. We are all Republics with democratic forms of government, with democratic ideals and society, and are becoming ever more democratic. All of us are inspired, as youth always is when it is worth while, with hope and with the idea that we have a mission in the world, something to teach the whole world. Certain responsibilities rest upon us, and I believe that we now, as never before in our history, are feeling that we have a mission to accomplish. The things that are taking place in Europe have brought this to our consciousness clearly as never before. Now then, with these things in view, Dr. Swiggett, Dr. Capen, and I tried to formulate some questions that we thought would be of interest, and a discussion of which would be helpful to us all. These questions were submitted to the proper authorities in the various Republics, and a large number of papers upon these topics have been submitted.

I find on consulting the program that our first paper is by Dr. Dario E. Salas, of Chile, and has for title "To what extent should elementary education be supported by local taxation, and to what extent by State taxation? What should be the determining factors in the distribution of support?"

ALGUNAS DEFICIENCIAS DE LA EDUCACIÓN POPULAR EN LA AMÉRICA LATINA.

Por DARÍO E. SALAS,

Profesor del Instituto Pedagógico de la Universidad de Chile.

I. PROBLEMAS.

Los sistemas de educación vigentes en los países de Hispano América no responden sino en forma muy incompleta a las necesidades de la colectividad que las sostiene. Entre las deficiencias que en ellos puede observarse, existen dos fundamentales: En primer lugar, no alcanzan a servir sino a una parte reducida de la población que ha menester enseñanza, y en seguida, omiten una serie de actividades de enorme trascendencia social, relacionadas con el perfeccionamiento cultural y técnico del adolescente y del adulto. Los medios de llenar esos dos grandes vacíos constituyen el asunto de este trabajo.

(1) *El adulto analfabeto.*—A pesar de la atención constante que los Gobiernos hispano-americanos dedican al problema de la educación popular, y de que algunos de ellos han llegado aun a dictar leyes de instrucción primaria obligatoria, la estadística del analfabetismo en la sección latina de este continente nos aterra todavía con cifras que fluctúan, según los países, entre un ochenta y un cuarenta por ciento de la población total. Las consecuencias de una situación como ésta, son a la vez dolorosas y evidentes.

Desde el punto de vista político, la igualdad de oportunidad, o no existe o no puede hablarse de ella sino con referencia a una porción muy limitada de los habitantes. La masa de la población se encuentra en la imposibilidad de aprovechar las ventajas del régimen democrático, y carece del instrumento esencial para incorporarse a la vida cívica—el sufragio—o, si lo tiene, se halla incapacitada para emplearlo en forma inteligente. El Gobierno y, por lo tanto, la suerte de cada país, quedan así en manos de unos pocos, que, representantes en realidad de la opinión y de las aspiraciones de un grupo—el letrado—pueden no atender a las necesidades e intereses de la mayoría.

Desde el punto de vista social, la ignorancia de las masas da origen a profundas diferencias de clases y a una situación de semiservidumbre del analfabeto con respecto a la población ilustrada. No es sino a la ignorancia también, a lo que deben atribuirse las bajas normas de vida que dominan en nuestro pueblo, así como su falta de hábitos económicos e higiénicos y el cortejo de males que de esas condiciones se derivan. El alcoholismo y otros vicios contra los cuales se lucha en las Repúblicas latinoamericanas, son finalmente—excusado es decirlo—resultado de la ignorancia, y en especial de la incapacidad en que ella coloca al individuo para apreciar las formas elevadas del placer, condenándolo así a buscarlo en sus aspectos groseros y defectuosos.

El desconocimiento, además, de las artes elementales por parte de los que han de vivir del trabajo de sus manos, y la consiguiente inhabilidad de los mismos para adquirir una adecuada preparación técnica, no sólo condenan a esta porción no favorecida de la sociedad a vegetar en la miseria o en ocupaciones desprovistas de horizontes, arrebatándole oportunidades de perfeccionarse en oficios que le ofrezcan porvenir, sino que repercuten hondamente en la vida económica de la colectividad en general. Pues hoy, que las faenas industriales, con el perfeccionamiento constante de la maquinaria y las aplicaciones cada vez más numerosas de la ciencia, se hallan sujetas a continuo cambio, la necesidad de obreros expertos es más sentida aún que en el pasado. Sin ellos, podrá un país seguir siendo el dueño, el productor exclusivo, si se quiere, de la materia prima, y continuar, sin embargo, por un tiempo indefinido, con sus industrias en estado incipiente o en calidad de tributario del extranjero, sea por el artefacto o por la mano hábil.

Desde el punto de vista moral, por último, si las consecuencias de la situación revelada por las cifras del analfabetismo no son todavía desastrosas, lo serán, sin duda, en el futuro, a menos que una educación adecuada interponga sus influjos. Porque es fácil ver que las fuerzas tradicionales de moralidad y disciplina—la familia y la iglesia—empiezan, como en todas partes, a perder, también entre nosotros, su eficacia. La instrucción del adulto analfabeto es pues, indispensable hoy día en Hispano América, no sólo para adaptar a aquél a las exigencias intelectuales y a las condiciones económicas de la civilización moderna, sino también para sustituir la acción de aquellas fuerzas dando al individuo normas elevadas de conducta y desarrollando en él la voluntad y el hábito de proceder en conformidad a ellas.

(2) *El adulto semiletrado*.—No muy superior a la condición del totalmente analfabeto es, en nuestros pueblos hispano-americanos, la del adulto que concurrió a una escuela en su niñez, durante un período de uno o dos años y cuyo índice de cultura no es hoy otro que su firma estampada en algún registro electoral. Esta clase, que constituye un tanto por ciento crecidísimo de la porción "letrada" de cada país, no sabe en realidad leer, ya que es generalmente incapaz de aprovecharse de la lectura para extender el campo de sus conocimientos. Y, por otra parte, si la escuela puso alguna vez el libro en sus manos, nunca supo ni pudo darle una noción correcta de sus deberes cívicos, ni enseñarle a vivir, ni prepararle para la eficiencia económica.

Desde el punto de vista político, sobre todo, los individuos de este grupo representan un peligro, si se quiere más grave que el de los totalmente ignorantes. Pues, al paso que éstos últimos no tienen medio alguno legal de influir en el Gobierno, aquéllos, en posesión de un arma, el voto, que ni aprecian ni saben emplear—y de la cual, por lo demás no siempre están en situación de disponer libremente—pueden contribuir en forma positiva a perpetuar regímenes antidemocráticos, vendiendo sus conciencias, o, dando oído a prédicas dañinas, fortalecer tendencias contrarias al interés colectivo y a la ordenada evolución de las instituciones sociales.

(3) *El adolescente*.—Problema tan grave como el que presentan los analfabetos y semianalfabetos adultos, ofrece al educador en la América Latina el considerable número de jóvenes que, obligados por la precaria situación de sus familias, abandonan la escuela a los 13 o 14 años, para salir, reclutas aún de la vida, a ganarse el pan sin el auxilio ajeno.

Los programas de enseñanza primaria, adaptados por lo común a servir fines meramente culturales—ya que a menudo las escuelas aparecen fuera de contacto con las necesidades de la sociedad actual y sirviendo ideales de otra época—no han podido preparar a esa juventud para afrontar con buen éxito sus nuevas responsabilidades. Falto de preparación técnica, y de lo que ella intelectual y moralmente significa, esos jóvenes no pueden aspirar sino a ocupaciones fáciles, sin expectativas, sin posibilidades de perfeccionamiento. Y no está ahí el único mal. La época en que esta porción de nuestros conciudadanos se sustrae a la acción educadora coincide en forma precisa con un período en que esa acción es particularmente eficaz y necesaria. Porque, por un lado, y a causa de la creciente madurez del sujeto y sobre todo de los intereses que en esa edad se desarrollan, es ésta la época más adecuada para el cultivo de ideales sociales, para hacer comprender las relaciones que ligan entre sí a los hombres y mostrar cómo la felicidad individual, se liga en último término y en forma indisoluble, al bienestar colectivo. Y por otra parte, esta edad del segundo nacimiento que llamó Rousseau, edad tormentosa en que el hombre es naturalmente reacto a la disciplina y se halla más que nunca expuesto a las seducciones de la vida fácil, ha menester, más que cualquiera otra, de una delicada dirección moral.

(4) *La mujer*.—Las deficiencias de la educación popular que acaban de anotarse, adquieren particular gravedad en cuanto afectan a la mitad femenina de nuestra población. La mortalidad infantil y la natalidad ilegítima con sus desesperantes porcentajes; la mala crianza de los hijos; las plagas de orden moral que azotan lastimosamente a la niñez; el desaseo y la miseria misma, la superstición que alcanza a

veces hasta sus formas más groseras; todo eso tiene origen, parcialmente al menos, en la falta de preparación de la mujer de nuestro pueblo para su función social. Enseñarle el arte de criar hijos y educarlos, el arte de cuidar y embellecer el hogar y el arte de la economía; trabajar por su independencia intelectual, y habilitarla para ganarse la vida en ocupaciones honradas: he ahí, pues, necesidades cuya satisfacción reviste caracteres de inmediata urgencia.

II. SOLUCIONES.

Basta el simple enunciado de tales problemas para sentir que ellos merecen nuestra atención preferente; pues sería difícil encontrar algún otro cuya trascendencia social y moral fuera más profunda u otro que más hondamente repercutiera en nuestra vida económica y política. Preocupémonos, pues, de resolverlos.

La experiencia de Europa y Estados Unidos, demasiado conocida de los miembros de esta sección del Congreso, para que sea necesario referirse explícitamente a ella en el curso de nuestro estudio, nos aliviará considerablemente la tarea.

(1) *Escuelas de instrucción primaria para adultos.*—Conocida es la solución que se procura dar en todas partes al problema del analfabetismo en lo que se refiere a la población adulta. Escuelas especiales de instrucción primaria dominicales y nocturnas, anexas a las regulares y sostenidas por el Gobierno central o el local y por instituciones privadas, son el medio a que generalmente se recurre. Como estas escuelas no siempre dan los resultados que de ellas se espera, cabe discutir su carácter, a fin de llegar, si es posible, a determinar las condiciones en que debe establecércelas para asegurar su buen éxito.

La primera y más grave dificultad con que se tropieza en la enseñanza de adultos—aparte, es claro, de la falta de escuelas suficientes—es la desidia del analfabeto mismo, desidia que se traduce en matrículas escasas y asistencias en extremo irregulares. Para remediar este inconveniente—y ya que no puede pensarse en la compulsión, donde ésta ni siquiera existe para el niño—precisa, en primer lugar, a nuestro juicio, obtener la cooperación de los patrones, haciéndoles comprender por todos los medios, cosa no siempre fácil, que la educación de sus obreros y empleados es de interés directo para ellos y redundante en su propio beneficio. Como una prueba de la eficacia de este concurso puede citarse, entre muchas otras que sin duda ofrecerán los demás países de la América Latina, el caso de la ciudad de Concepción, en Chile. Se ha logrado allí constituir, mediante los esfuerzos de las autoridades locales, una Liga Pro-Instrucción Obrera, formada por los dueños de fábricas y talleres, y cuyo principal objeto es estimular por diversos medios, aumento de salario y otros, la asistencia de los obreros a las escuelas de adultos que sostiene el municipio. Como resultado del trabajo de esta liga, Concepción tiene hoy día, no sólo las mejores escuelas nocturnas comunales de Chile, sino también las más concurridas.

La matrícula escasa y la asistencia irregular hallan también origen en el hecho de que estas escuelas funcionen por lo general sólo en la noche. Cuando se piensa en que, después de un día de trabajo, cualquiera necesita hacer esfuerzos considerables aun para mantenerse despierto, es fácil comprender que el obrero rehuya naturalmente, a esas horas, una tarea que le obliga a concentrar su atención y que, a pesar del interés remoto o inmediato que en ella pueda encontrarse, demanda, sobre todo si no se está acostumbrado a esa especie de trabajo, un gasto casi extraordinario de energía. Otro remedio, pues, que puede sugerirse para dar más eficacia y extensión a la obra de las escuelas de adultos, es transformarlas de nocturnas en vespertinas. Para esto, es claro, la cooperación y buena voluntad de los patrones se hace, una vez más, indispensable.

Pero la causa más fundamental de la irregularidad en la asistencia, de lo limitado de la matrícula y en general de la ineficacia de la enseñanza de adultos, reside, a nuestro juicio, en las escuelas mismas, en su organización en sus planes y materias de estudios, en sus métodos.

El error que en estos diversos aspectos se comete es un error de adaptación. Porque lo que falta en esas escuelas, sobre todo, es el ajustamiento de sus actividades educadoras a las características mentales, a los intereses y a las necesidades del hombre ya formado. Ese ajustamiento constituye en realidad su norma, su principio esencial, y es a él, por lo tanto, a lo que debemos referirnos si queremos determinar las condiciones que ellas han de satisfacer para realizar cumplidamente su propósito. Ensayemos esta determinación.

En primer lugar, es evidente que tal adaptación resulta imposible cuando concurren a una misma clase los adultos y los niños. La separación se impone; la escuela de adultos ha de destinarse exclusivamente a los adultos. La disciplina, en seguida, no puede basarse—aceptada aquella norma—sino en el sentimiento del honor, en la confianza, en la responsabilidad propia del educando, en el respeto a su personalidad y en la sanción social. Otros recursos, que pueden tener buen éxito tratándose de niños, resultarían ineficaces aplicados al adulto. De igual modo, las materias de estudio, no podrán elegirse sino tomando en cuenta sobre todo su utilidad más o menos directa e inmediata, y los métodos, en conformidad al mismo principio y atendida la amplia base de aperccepción de que en este caso dispone el discípulo, deberán ser rápidos—tanto como sea compatible con la solidez de lo aprendido—y ceñirse, más aún que en la escuela para niños, a la regla esencial de que toda enseñanza ha de relacionarse con la experiencia del educando, nacer de alguna necesidad suya, de alguno de sus intereses. Las diferencias que en cuanto a la preparación y a la capacidad existen entre los alumnos, aconsejan, además, que especialmente en la técnica de las artes instrumentales—lectura y escritura—el trabajo se realice en forma individual, a fin de evitar que se produzcan el desaliento en los menos favorecidos y el tedio en los otros. Finalmente, en lo que respecta a la organización, el ajustamiento a las circunstancias del educando exige que la escuela reproduzca en lo posible la vida real, de modo que en ella se ejerciten actividades semejantes a la de ésta, que nazcan parecidas instituciones, que obren iguales estímulos y que el buen éxito o el fracaso sean determinados por los mismos factores que en la vida real los condicionan.

Consideremos más de cerca algunos de estos puntos, en especial el relativo a las materias de enseñanza.

Por cierto, la primera tarea, la fundamental, en las escuelas de adultos, consiste en enseñar a leer y a escribir, como quiera que estas artes constituyen instrumentos esenciales de adquisición intelectual. Pero la lectura y la escritura no son atractivos suficientes para el obrero, ni la escuela, por su parte, llenaría con eso sólo su misión. Hay otros ramos que también responden a los intereses del alumno, que le son útiles y de los cuales puede la escuela sacar partido considerable para la realización de los fines sociales y morales que persigue. Tales son, por ejemplo, la aritmética y el dibujo, ambos especializados, si es posible, en la dirección indicada por la ocupación del educando. Tal es también la geografía nacional, estudiada principalmente en sus aspectos económicos, y tal es igualmente la redacción, sobre todo en forma de sencillos ejercicios de correspondencia familiar y comercial. Pero el ramo interesante, útil y educador por excelencia, en las escuelas de adultos, es la higiene. Púedese, sin temor, asegurar que no es tanto el porcentaje de letrados lo que da el índice de la civilización de un pueblo, como el grado en que los hábitos higiénicos—fruto, como toda civilización, de un esfuerzo, de una lucha contra la naturaleza—han alcanzado a generalizarse en él y a hacerse permanentes.

Inculcar hábitos higiénicos y enseñar higiene no sólo significa, pues, prolongar la vida de la generación actual y obtener futuras generaciones más sanas y eficientes, sino que significa también civilizar, elevar al hombre sobre el nivel del bruto. Y superfluo es agregarlo, significa, además, moralizar. Porque, si la práctica del aseo nos "aproxima a la santidad," el conocimiento objetivo que en esta enseñanza se dé acerca de los órganos y sus funciones y del efecto que sobre ellos producen el alcohol, el tabaco, el mal régimen alimenticio y los desórdenes y abusos de toda clase, contri-

buirá con más eficacia al mejoramiento de la conducta, que todos los sermones. Casi innecesario es decir que conviene dar importancia especial en este estudio a sus aspectos económicos, procurando mostrar, en cada caso, cómo la vida higiénica tiene entre sus ventajas, la de resultar barata. Y también es quizás innecesario añadir que, desde el punto de vista práctico, la enseñanza de la higiene debe determinar no solo el cuidado individual del propio cuerpo, sino también la formación en las escuelas, de sociedades de excursiones y deportes, de ligas de temperancia y otras instituciones parecidas.

Sitio de preferencia, por último, debe ocupar en el programa de trabajo de estas escuelas, la educación cívica. En cierto sentido, toda la obra que ellas desarrollan no es otra cosa que educación cívica; pues, al enseñar al adulto las artes esenciales de la civilización, lo incorporan de hecho a la ciudadanía, le dan posibilidades de alcanzar más fácilmente su propio bienestar y el de su familia y desarrollan en él las virtudes de perseverancia, disciplina, trabajo, dominio de sí mismo, previsión y otras, que determinan la eficiencia social del individuo. Pero la escuela puede proceder también por medios más directos. Pues, aparte de la instrucción cívica teórica, cuyas relaciones con la economía, la higiene, y sobre todo la historia nacional, no deben descuidarse, la escuela de adultos presenta en su régimen y organización, o debe presentar, ciertas características que constituyen otros tantos eficacísimos recursos para la formación del ciudadano. Tales son, por ejemplo, el Gobierno propio de los alumnos; la administración de las bibliotecas, material de enseñanza, etc., por individuos o comités elegidos también entre los discípulos; la creación de instituciones—bancos escolares, sociedades de ahorro, de ayuda mutua, de perfeccionamiento personal y otras—que contribuyan al bienestar de cada alumno y junto con mostrarles la interdependencia de sus intereses y los ajenos, les enseñen que, sin la cooperación, la vida en sociedad es imposible.

Llega ahora el momento de preguntarse a quién corresponde sostener y administrar las escuelas destinadas al adulto. Práctica frecuente, según creemos, en la América Latina, es dejar esta responsabilidad en manos de instituciones privadas. Tratándose, sin embargo, de una obra de extensión y trascendencia tan considerables entre nosotros, no nos parece posible abandonarlas a la iniciativa particular. Ella debe ser considerada como parte esencial del sistema escolar y tener, por consiguiente, como él, carácter público. El Estado debería sostener y dirigir, como lo hace en Chile, una escuela de adultos anexa a cada escuela normal de preceptores, y dejar el resto, o casi todo el resto de la tarea, a las Comunas. Las anexas servirían de modelo ilustrativo de las prescripciones generales que dictaría el Gobierno central sobre la organización de tales establecimientos, y además, como en Chile también, de campo de observación y ensayo para los futuros maestros.

Al Estado, es claro, corresponde, además, costear y dirigir la enseñanza del adulto en los cuarteles, labor interesantísima, y que, en algunos países, alcanza ya considerables proporciones. En Chile, de entre los conscriptos del servicio militar, reciben instrucción en las escuelas del ejército más de 6,000 analfabetos cada año. La asistencia es, por cierto, obligatoria. La enseñanza es dada por maestros normalistas y se halla bajo la vigilancia de un inspector especial. Entre sus ventajas, tienen estas escuelas la de ser económicas: la educación de los 6,516 individuos que han concurrido a ellas en 1915, no cuesta al Estado sino \$255,200, o sean \$39 por alumno.

Pero el grueso de la responsabilidad por la educación del adulto analfabeto caería, como se ha dicho, sobre los municipios. Y hay para ello razones, no sólo de orden económico, sino también de índole educacional. Porque, por una parte, sostenidas estas escuelas con fondos comunales, el pueblo, sintiendo que contribuye directamente a costearlas, se interesaría en ellas, las consideraría como cosa suya y esto lo inclinaría, sin duda, a aprovechar de sus beneficios. En seguida, nadie mejor que la autoridad municipal conoce las necesidades locales inmediatas y las condiciones en que se desarrolla la vida del trabajador en cada porción del territorio y nadie, en consecuencia,

está mejor que ella en situación de adaptar a esas necesidades y condiciones los programas de enseñanza y las actividades educadoras en general. Y finalmente, como el régimen de administración local facilita la cooperación de los particulares, y en especial de los patrones, a la obra de la escuela, hay razón para creer que, implantándolo, aumentaría la asistencia, se crearían sin dificultad medios de estímulo y se dispondría de recursos extraordinarios.

(2) *Escuelas de segundo grado o de perfeccionamiento para adultos.*—La labor que cumple desarrollar en la América Latina respecto a los semiletrados, es decir, de los adultos que recibieron en su niñez una educación primaria incompleta, es más o menos semejante a la que se ha propuesto para el analfabeto, ya que sus necesidades, sea que se las mire desde el punto de vista moral, social, cívico o económico, son en gran parte las mismas de este último. Se trataría sólo de hacerlos asistir a las clases superiores de las escuelas ya descritas.

Pero, pasado este escalón de instrucción primaria general—que abarcaría, en nuestro concepto, un período de dos años más o menos—surge, con respecto a unos y otros, la necesidad de aumentar su eficiencia económica preparándolos de un modo más directo para librar el combate de la vida en condiciones favorables.

Precisa, pues, establecer, para los que han terminado ya lo que podría llamarse el primer ciclo de la enseñanza de adultos, y para todos los que se hallen en sus circunstancias, clases complementarias técnicas, en las cuales, junto con ampliar su instrucción general, se les dé oportunidad para aprender un oficio o perfeccionarlo. Ganan con esta educación, no sólo el trabajador, cuyos salarios y expectativas aumentan a medida de su perfeccionamiento, sino también la industria, cuyos operarios se hacen cada vez más aptos, y aun la escuela misma, que se eleva en la estimación pública cuando se palpa en forma tan directa la eficacia de su acción.

En la organización de estas escuelas será de grande utilidad, sin duda alguna, la experiencia alemana, sobre todo si se la estudia en el sistema de escuelas de perfeccionamiento de Múnchen, que, como se sabe, debe su eficiente forma actual, al superintendente Jorge Kerschensteiner. Adaptando esa experiencia a las condiciones de nuestras Repúblicas, se podría, nos parece, fijar, para el establecimiento de las instituciones que proponemos, las líneas generales que siguen. El plan de trabajo presentaría dos fases principales, práctica y técnica la una, teórica o de instrucción general la otra; la primera comprendería el aprendizaje o perfeccionamiento de un oficio y consistiría, por una parte, en labores de taller, y por otra, en el estudio de aquellos ramos—física, química, dibujo, modelado u otros—que se relacionen directamente con el trabajo del taller, eligiendo, sí, entre sus aspectos y los procedimientos de su enseñanza, aquellos que mejor contribuyan a la consecución del fin práctico que se persigue. La segunda fase, o sea la de instrucción general, que tendría en gran parte calidad de optativa, a fin de adaptarse mejor a las necesidades, intereses y aptitudes de cada alumno, comprendería la lengua materna, especialmente la literatura nacional; aritmética aplicada, contabilidad y correspondencia comercial; historia, dándose importancia a la del desenvolvimiento industrial y al estudio de personalidades inspiradoras, y geografía económica. Convendría agregar cursos de física y química, y de zoología, botánica y mineralogía, experimentales o simplemente objetivos, según la naturaleza del ramo, pero de un carácter algo más general que el dado a algunos de estos ramos en la fase anterior. Por cierto la educación cívica y la higiene deberán ocupar el mismo preferente sitio que se les asignó en la enseñanza del primer grado. Se procurará, sobre todo, desarrollar y multiplicar las instituciones cuyas formación se recomendó entonces como indispensable complemento y aplicación de tales estudios.

A este grado de la educación del adulto corresponden, además de las escuelas que acaban de describirse, algunos cursos complementarios especiales, como los de comercio, por ejemplo. La adaptación a las necesidades de la localidad y la combinación de la enseñanza propiamente práctica con la instrucción general y la prepara-

ción para la vida ciudadana, constituyen, también aquí, las normas generales del trabajo.

En lo que respecta al sostenimiento de estas instituciones complementarias de segundo grado, nos parece, como en el caso de las del primero, y por iguales razones, que ellas deberían ser iniciadas por el Gobierno central, con carácter de escuelas modelos, anexas a las especiales correspondientes—de artes y oficios, comerciales y otras—creadas de su propia cuenta después, por los municipios, a medida que lo permitieran sus recursos. De grande importancia será, tratándose de estas escuelas, la cooperación de los particulares. Tocará a las autoridades comunales conseguir de los patrones que faciliten y estimulen la concurrencia de sus obreros y empleados; de las casas de comercio, que ayuden a la obra obsequiando materiales y herramientas; de algunas instituciones o individuos, que colaboren en el desarrollo de la acción propiamente social de las escuelas.

(3) *Extensión de las instituciones docentes.*—Aparte de estos medios regulares de educación complementaria, precisa emplear, en beneficio, no sólo de los que hayan terminado los dos grados de enseñanza ya descritos, sino de la mayoría de los ciudadanos, otros recursos destinados a vulgarizar la ciencia y sus aplicaciones prácticas, a generalizar la apreciación del arte y sobre todo a ilustrar al público acerca de los problemas nacionales de trascendencia que le afecten y sobre los cuales puede llamársele alguna vez a resolver. El aspecto más generalmente conocido de esta obra es el de extensión docente, que realizan las universidades e instituciones técnicas y aun los colegios de segunda enseñanza y las escuelas de maestros.

Tratándose de la extensión universitaria, no podría tal vez exigirse que las universidades latinoamericanas desarrollaran desde luego esta labor en las formas modernísimas que ha llegado a adquirir en Wisconsin, por ejemplo; pero es dable esperar—si pretenden acercarse al ideal de universidad en una democracia—que procuren iniciarla siquiera en forma de cursos y de conferencias aisladas y sobre todo que, si no les es posible llevarla a cabo por cuenta propia, patrocinen y auxilien la obra de otras corporaciones que se hallen en situación de realizarla. Es esto último sobre todo lo que se ha hecho ya en la Universidad de Chile. Esta institución, aparte de costear ciertas conferencias periódicas, de carácter estrictament universitario, ha dado facilidades y prestado su apoyo moral, a la labor extensionista que en sus aulas iniciara en 1907 la Asociación de Educación Nacional. Merced a la obra de esta asociación, continuada desde entonces con abnegación y entusiasmo, y principalmente en forma de conferencias, en cursos o aisladas, ilustradas a menudo con proyecciones luminosas y siempre amenizadas con buena música o agradable literatura, el concepto de universidad ha evolucionado notablemente en aquel país en los últimos años. Junto con el pueblo, ha llegado hasta los viejos claustros vida nueva. Y desde la tribuna del salón de honor, antes desierta, los hombres más distinguidos con que cuenta el país en los distintos órdenes de la actividad, universitarios o no, han dilucidado ante audiencias numerosísimas—el total de asistentes a las 160 y tantas conferencias dadas hasta ahora, excede de 120,000—casi todos los problemas de educación, de finanzas, de higiene pública, de política, etc., que han interesado o debido interesar a la generalidad de los ciudadanos. Se desarrolla, así, hoy día en Chile, no sólo el hermoso anhelo de aprender, sino el más hermoso afán de enseñar y de contribuir a que se enseñe. Porque, si bien es la Asociación de Educación Nacional la que ha iniciado y dirige el servicio de extensión, no son los profesores solos quienes han dado a ésta el carácter de verdadera institución pública que hoy día tiene, pues, incitados por la excelente labor de propaganda de aquella corporación, políticos de opuestos bandos, industriales, artistas, obreros y estudiantes, han prestado también en diversas formas su concurso.

Como resultado de su ya larga experiencia, la asociación considera—y éstas parecen normas dignas de adoptarse—que, en general, conviene dar preferencia a los cursos sobre las conferencias aisladas; que a cada conferencia debe acompañar un buen resumen impreso, a fin de preparar al auditorio para la materia que va a tratarse y facilitarle su recuerdo; que la entrada debe ser gratuita; que en el programa de las

reuniones deben figurar siempre números artísticos, y finalmente, que la extensión sea tal en el sentido de esparcir su actividad más allá de los centros universitarios, para lo cual conviene obtener la formación de comités de cooperación locales.

Igualmente interesante y útil puede ser la acción que desarrolle en el trabajo que nos ocupa, el profesorado de los colegios de instrucción secundaria y los institutos normales. Sea en el propio local de esos establecimientos o en los de las escuelas complementarias, estos maestros podrían dar cursos y conferencias, sobre todo de vulgarización científica, y con las ventajas que les da su preparación pedagógica, desempeña esta tarea, tanto o más eficazmente que el profesorado universitario. Esta obra ha sido emprendida también en Chile, a iniciativa de la misma Asociación de Educación Nacional en lo que respecta a la extensión secundaria, y en las escuelas de maestros—en una de las cuales, la número 3 de rectorías de Santiago, existía ya desde su fundación en 1905—forma desde hace dos años, por disposición de sus nuevos reglamentos, parte integrante de su programa de trabajos.

Importante concurso también pueden allegar a la obra extensionista las instituciones técnicas, particularmente las industriales y agrícolas, mediante cursos prácticos, exposiciones de artefactos y productos, etc. La extensión agrícola ha sido ya ensayada con buen éxito en Chile por el instituto especial correspondiente, en forma de cursos celebrados en los terrenos del establecimiento y de lo que podría llamarse la extensión viajera, es decir, en forma de excursiones realizadas a través del territorio por un profesor y alumnos de cursos superiores en un carro especial, que va deteniéndose en algunos puntos y en el cual se llevan colecciones de las mejores semillas y productos, útiles de labranza, etc., con el fin de hacerlos conocer de los agricultores y mostrar a éstos las ventajas de los métodos modernos en materia de cultivos y otros aspectos de las faenas agrícolas.

(4) *Otros medios complementarios de educación del adulto.*—A este período de la educación corresponden también diversos medios complementarios de enseñanza, como las escuelas de correspondencia, periódicos y revistas post-escolares; oficinas centrales en cada país o estado, de colecciones y préstamos de clichés para proyecciones; bibliotecas y teatros populares; museos industriales, artísticos, históricos y de ciencias naturales; campos de juego, etc. No sería útil extenderse en la consideración de estos diversos recursos, ya que ellos son sobrado conocidos y su utilidad es manifiesta; pero no podría dejarse de llamar la atención hacia el servicio de bibliotecas circulantes, relativamente fácil de establecer y que resultaría de sumo provecho en los países latinos de nuestro continente. Esta labor podría quedar a cargo de las bibliotecas centrales, o en manos de instituciones particulares. En ambos casos, convendría, a nuestro juicio, tomar como modelo el procedimiento empleado por la Liga Belga de Enseñanza. Esta institución ha formado bibliotecas circulantes que constan de algo más de cien volúmenes y que cuestan, incluso la estantería y el embalaje, alrededor de fr. 250. Las obras de que cada una se compone, están seleccionadas de modo que sirvan en una tercera parte a los niños, en otro tercio, a los adolescentes y adultos y en un tercio a las personas mayores.

La biblioteca se da en préstamo por dos años a algún profesor u otra persona honorable, que se encarga de ponerla a disposición del público, a lo menos una vez por semana. Si al cabo del período del préstamo la biblioteca se halla bien conservada y ha sido utilizada suficientemente, se la reemplaza por una segunda, que se presta también por dos años. El bibliotecario, entre tanto, debe hacer lo posible por despertar entre los habitantes el deseo de tener una biblioteca propia en la localidad, y constituir para este último objeto, una sociedad de lectores, a cuyos miembros se exige mensualmente la modesta cuota de cinco céntimos. Con esta contribución, la localidad, al término de tres años, cuando cada erogante ha dado ya 1 fr. 80 cent., se halla en situación de adquirir una biblioteca de tantos volúmenes como haya lectores erogantes. Donaciones, beneficios, la ayuda de los poderes públicos, el intercambio

de libros con los pueblos vecinos, hacen que, llegado el plazo del segundo préstamo, el auxilio de la Liga sea ya innecesario.

(5) *Escuelas de perfeccionamiento para adolescentes, sociedades de ex-alumnos, dirección vocacional.*—¿Cómo resolver, ahora, el problema del adolescente que ha menester ganarse la vida y a quien la escuela no alcanzó a preparar convenientemente para la eficiencia social?

Los países viejos que poseen leyes más o menos antiguas y eficaces de obligación escolar—Alemania, Suiza, Escocia—y algunos estados de la Unión Americana, como Indiana y Wisconsin, por ejemplo, solucionan la cuestión imponiendo a esos jóvenes la obligación de concurrir hasta los 16 o 18 años a escuelas de perfeccionamiento, y a sus patrones, la de facilitarles la asistencia. En los países que carecen de obligación o en que ésta se halla poco arraigada aún en la mente popular, como es el caso hoy día en Hispano-América, tales escuelas—que constituyen el mejor medio de satisfacer la necesidad que nos ocupa—no podrían ser sino voluntarias. La obligación, sin embargo, alcanzaría a los patrones; sería para ellos forzoso permitir la frecuentación siempre que el empleado lo solicitara.

No creemos necesario detallar el carácter de esta enseñanza, pues, salvo pequeñas diferencias impuestas por la distinta edad de los alumnos, él debería ser, a nuestro juicio, análogo al de la impartida en las escuelas de segundo grado que han sido ya descritas. Convendrá, sí, recordar que en las escuelas de adolescentes, la educación moral y cívica tiene aún mayor trascendencia que en las de adultos, y que las instituciones sociales cuya formación se ha recomendado en beneficio de éstos, son más indispensables, aun tratándose de aquéllos. La forma de sostenimiento de las dos clases de escuelas, por lo demás, sería la misma, y unos mismos también sus locales, manteniéndose, eso sí, la separación de cursos, como antes propusimos.

Otro medio de dar a esta juventud, si no de una manera directa, indirectamente, una preparación técnica, y un medio, sobre todo, de continuar en esta época, la más peligrosa de la vida la influencia moral de la escuela, son las instituciones de ex-alumnos. Las "Amicales" francesas y las variadísimas formas de "school centers" de Estados Unidos, destinados a reunir a los jóvenes en el local escolar, no para recibir lecciones regulares sino para estudiar o recrearse por cuenta propia, en grupos formados según sus gustos e intereses, son, a nuestro modo de ver, los mejores ejemplos que pudiéramos imitar en esta clase de trabajo.

Más interesante aún para nosotros es un recurso nuevo, en vías de generalizarse ya en los Estados Unidos, y cuyo objeto es, por una parte, llenar el vacío entre la escuela teórica y la vida, y por otra, facilitar al adolescente la elección de un oficio en armonía con sus conveniencias y aptitudes, tarea esta última que, en las condiciones actuales del comercio y de la industria, presenta a la juventud considerables dificultades. El recurso a que aludimos es la dirección vocacional, modalidad de la educación cuya importancia especial en los países latinoamericanos, donde faltan, por lo común, leyes eficaces que regulen el trabajo de los niños, nos parece innecesario ponderar.

Las formas en que Inglaterra y algunos estados de la Unión Americana practican la dirección vocacional, son particularmente sugestivas. En Inglaterra, un comité central, "The English Apprenticeship and Skilled Employment Committee," ayudado por comités locales establecidos en distintas ciudades, suministran datos de toda especie relativos a las diversas profesiones e industrias, a su porvenir, a las oportunidades de perfeccionamiento que ellas ofrecen, a sus ventajas e inconvenientes higiénicos, etc. Folletos como "Trades for London Boys and How to Enter Them," y "Trades for London Girls and How to Enter Them," profusamente distribuidos, dan a los jóvenes esa clase de información. De medios parecidos, y más variados, se vale la Oficina Vocacional de Boston, institución que, aparte de los folletos ilustrativos, emplea las conferencias, las bibliotecas escolares vocacionales, los consejeros vocacionales y aun otros recursos.

La adaptación de tales procedimientos a los países latinos de este continente es, a nuestro juicio, una tarea que debiera emprenderse sin demora.

(6) *Preparación de la mujer para su función social.*—No existe razón alguna para negar a la mujer adulta que no concurrió a la escuela en su niñez, las oportunidades que se ofrecen al hombre para recibir una educación primaria general, o una complementaria técnica. De hecho, en numerosos países, incluso Chile, existen escuelas nocturnas femeninas de rango primario, anexas a las normales para niñas, y en las cuales se da importancia a las labores propias de la mujer. Aparte de los ramos instrumentales, debiera darse preferencia en estas escuelas de primer grado para mujeres, a la higiene, a la puericultura, al cuidado del enfermo, a las ciencias y artes domésticas. Las actividades sociales—bancos, cajas de ahorro, etc.—antes recomendadas para las escuelas de varones, y sobre todo, es claro, la educación moral y económica—trátase de estas escuelas de primer grado, o de las de perfeccionamiento para adultas o niñas—no deben tampoco descuidarse. En escuelas de segundo grado análogas a las de varones, destinadas a las que ya poseyeran los conocimientos elementales, podría ampliarse la educación general, especialmente en lo que se relaciona con la preparación de la buena madre de familia y agregarse la enseñanza propiamente técnica, desarrollada de un modo semejante al que ella toma en las escuelas profesionales femeninas.

Para el sostenimiento de estas escuelas debería procederse como en el caso de las de hombres.

En la educación de la mujer adulta, puede ser útil también la extensión en sus diversas formas. Basta referirse, como ejemplo, a la labor de la Sociedad Belga de pedotecnia, que organiza ciclos de conferencias ilustradas, y además, los domingos por la mañana abre una oficina especial de consulta gratuita sobre crianza de niños atendida por médicos y pedagogos. Los cursos de arte maternal, prácticos y objetivos, abiertos por el Dr. Gilson, unos para solteras y otros para casadas, en el barrio de Saint-Gilles, Bruselas, son otro ejemplo.

La inmensa variedad de clubs y asociaciones de madres de los Estados Unidos, con sus reuniones periódicas en el local escolar, destinadas a escuchar conferencias, a cambiar ideas acerca de los mejores medios de criar y educar convenientemente a los hijos—instituciones cuyos miembros forman a veces por sí solos cursos de economía doméstica, de puericultura, etc., muestran las grandes posibilidades de la extensión femenina en las escuelas.

Iguales o mayores facilidades que a la mujer adulta debiera darse naturalmente a las niñas que han menester trabajar para vivir y cuya educación general o profesional ha sido incompleta. Como en el caso de los adolescentes varones, deberían establecerse para las niñas cursos de perfeccionamiento que funcionarían en los mismos locales de las escuelas de segundo grado para adultas. El carácter de la enseñanza en estos cursos se infiere fácilmente de lo ya dicho respecto de las escuelas femeninas y de las de adolescentes varones.

Las sociedades de ex-alumnos, recomendadas como medio de prolongar el influjo de la escuela sobre los jóvenes, tienen igual importancia y deben ser organizadas en igual forma, tratándose de las niñas. La dirección vocacional también, es, respecto de éstas, necesaria. La obra del Comité de Londres antes citada y de la Liga de Educación Femenina de Boston, cuyo objeto es proporcionar a las escuelas de mujeres toda clase de informaciones relativas a las ocupaciones a que pueden dedicarse las niñas una vez terminada su instrucción primaria, y aconsejar y guiar a cada una según sus necesidades, puede bien servir de modelo en nuestros países.

III. CONCLUSIÓN.

En resumen, pues, las actuales deficiencias de la educación popular en la América Latina, en lo que se refiere al adulto y al adolescente, exigen el empleo de los siguientes recursos:

(A) *Respecto de los Adultos Varones.*—1. Escuelas nocturnas o vespertinas de instrucción primaria (primer grado) para analfabetos y semi-analfabetos, sostenidas algunas de ellas por el Estado, como escuelas modelos y de práctica pedagógica, anexas a las normales, y el resto por los municipios, con la cooperación de los particulares. Estas escuelas adaptarán su organización, programas, métodos de enseñanza y disciplina, a las necesidades e intereses del discípulo, a su condición de hombre formado y socialmente responsable. Fuera de las artes elementales y del dibujo, formarán parte esencial del plan de trabajo, la educación cívica, la higiene y el cultivo de actividades y hábitos corporales sanos y de virtudes sociales, mediante instituciones de temperancia, deportes, previsión, cooperación, etc.

2. Escuelas de perfeccionamiento (segundo grado), nocturnas o vespertinas, sostenidas en igual forma que las anteriores, anexas las del Estado a escuelas de enseñanza especial y destinadas a los que posean ya una educación correspondiente a la impartida en escuelas de primer grado. La enseñanza comprenderá una fase práctica y técnica —aprendizaje o perfeccionamiento de un oficio—y otra teórica o de instrucción general, en que, ampliándose los conocimientos del grado anterior, se dé a los alumnos oportunidad para perfeccionar los estudios de su preferencia. La educación cívica, la higiene y las instituciones cuya formación se recomienda para las escuelas de primer grado, recibirán también aquí particular atención.

3. Cursos complementarios especiales de comercio, etc., adaptados a las necesidades locales, y en que se combine la instrucción práctica con la general y la preparación para la vida ciudadana.

4. Extensión docente en universidades, institutos técnicos y escuelas normales y secundarias, mediante cursos y conferencias gratuitos, de vulgarización científica o sobre cuestiones de interés nacional. En las instituciones técnicas los cursos versarán principalmente sobre asuntos también de índole técnica e irán siempre acompañados de demostraciones prácticas.

5. Entre otros medios complementarios de educación popular, bibliotecas circulantes, oficinas centrales de colecciones y préstamos de clichés para proyecciones, bibliotecas y teatros populares, etc.

(B) *Respecto de los adolescentes varones.*—1. Cursos de primer grado, anexos a las escuelas de adultos correspondientes y de carácter análogo, con las diferencias impuestas por la distinta edad de los alumnos, destinadas a los que no hayan recibido instrucción primaria.

2. Cursos de perfeccionamiento, anexos a las escuelas de segundo grado para adultos y, con las salvedades del número anterior, análogos a éstas en su carácter.

3. Sociedades de ex-alumnos que permitan a la escuela prolongar su influencia moral y dar facilidades a los jóvenes para extender, con entera independencia y conforme a sus gustos e intereses, el campo de sus conocimientos.

4. Dirección vocacional, creando medios de suministrar a los jóvenes la información necesaria para elegir acertadamente una ocupación, de guiarlos y vigilarlos en los comienzos de su lucha por la vida.

(C) *Respecto de la mujer.*—1. Para adultas analfabetas o semi-analfabetas, escuelas de instrucción primaria, análogas a las de primer grado para varones, sostenidas en igual forma, y en que se enseñen las artes elementales y se dé importancia a la higiene, economía y artes domésticas y a la formación de instituciones semejantes a las indicadas para las escuelas masculinas.

2. Escuelas de perfeccionamiento para las que posean la instrucción del primer grado, análogas a las correspondientes de varones y sostenidas en igual forma. Se ampliarán aquí los conocimientos del primer grado preparatorios para la vida del hogar; la instrucción propiamente técnica comprenderá oficios femeninos, y se fomentarán instituciones sociales semejantes a las ya recomendadas.

3. Extensión docente, sobre todo en forma de cursos y conferencias relativas a puericultura, pedagogía maternal y otras materias adecuadas para preparar a la dueña de casa y madre de familia. Debe fomentarse la fundación de asociaciones de madres.

4. Como para los adolescentes varones, cursos de instrucción primaria y de perfeccionamiento para niñas, análogos a las escuelas de primero y segundo grado para mujeres respectivamente, y anexos a ellas.

5. Sociedades de ex-alumnas y dirección vocacional para las niñas, como en el caso de los jóvenes.

LEALTAD PATRIÓTICA.

Nuestros mejores anhelos como patriotas y americanos—la paz social, el progreso económico, el perfeccionamiento moral, el “equilibrio de oportunidad” característico de las democracias—aparecen estrechamente vinculados a la satisfacción de las necesidades que me he empeñado en poner de manifiesto.

Son tales la trascendencia y magnitud de la tarea que en este sentido queda aún por realizar en nuestras jóvenes Repúblicas, que ella merece constituir, por largos años todavía, la preocupación primordial de nuestros estadistas y el artículo primero en el programa de acción de todos los partidos.

Y es tal la naturaleza y tan amplio el campo que esta obra redentora deja a la iniciativa individual, que ella podría constituir, también por largo tiempo, el ideal común a cuya realización se encaminaran los esfuerzos de todos los ciudadanos ilustrados. Con eso, habríamos llegado a hacer participar de las ventajas de la educación a la sociedad entera: las escuelas en que los miembros de las clases cultas enseñaran al ignorante a leer y a vivir, serían para ellos mismos las mejores escuelas de espíritu público, el mejor medio de adquirir el hábito y la virtud del servicio.

The CHAIRMAN. I am going now to ask Sr. Ernesto Nelson, Director of Secondary Education, Buenos Aires, Argentine Republic, to read to you his paper on “The secondary school and the university.”

THE SECONDARY SCHOOL AND THE UNIVERSITY.

By ERNESTO NELSON,

Director Secondary Education, Buenos Aires, Argentina.

In his remarkable paper Dr. Charles W. Eliot has shown that the most vital need of secondary education is that of enlarging the pupil's opportunity to attain bodily skill and to train his habits of reasoning.

Dr. Eliot's plea is but the latest presentation of the twentieth century educational ideals. Long years of educational unrest as an outcome of methods of teaching whose chief purpose was the storing of the mind with the information given out by books have made us realize how much this kind of education falls short of the demands of modern life.

Considering that Dr. Eliot's plea is being duplicated in every civilized country of the world, and that it is not a new plea, it does seem wonderful that the realization of the ideal it expresses should still demand the combined efforts of the foremost educators of all lands. The purpose of the present paper is to analyze the secondary education of to-day with a view to discovering some of the obstacles that are in the way of the educator's dream and, if possible, to offer a new contribution to the problem.

It is unnecessary to dwell on the distinction between the education that tends to equip the student with specific information and that which aims to organize the activities of the mind and body so as to make man “an independent ego, the master

of himself and his environment." These two ideals of education may be contrasted as representing the old and the new, although both are rightfully represented in modern systems of public education. Just as in the surface of the earth rocks of various ages contribute to make up the soil on which man lives, so the educational fabric still shows evidences of the successive stages of educational evolution. Thus, however wonderful the changes have been in the content of the modern university as compared with the old, it must be admitted that the university is, of all the links of the educational chain, the one that retains more of the original character and spirit of education as a social activity, namely, to equip the student with specific information. At the other end of the chain the primary or graded school, and more prominently the kindergarten, have been freer to enter into the spirit of the new education and are instituting methods of work more and more in harmony with the growing belief that in the education of the child and the adolescent knowledge should be a sort of by-product, however precious, in the process of education, and that the vital question is the performing of the process itself, to which end ample opportunities should be given for the right training of the senses and the application of the reasoning powers.

The university on the one hand and the kindergarten on the other are, then, two extreme types of educational aims. It would be desirable if the influence of the kindergarten on the university were stronger than that of the university on the kindergarten. Unfortunately educational schemes do not partake of the nature of biological processes, in which every particle added to the morphological frame, every subsequent function of the organism, is conditioned to the materials already present in that organism. On the contrary, the educational fabric may be likened to a building in which every piece of material is used with due regard for the weight of that which will be placed above. Thus the password of education is "Preparation." We seem to be still far from the time when we shall have the courage to make life itself and business and culture, a natural "continuance" of those methods of education which will have proved to be more conducive to bring out the latent powers of man.

In controlling the educational process which takes place in the individual, it has become a commonplace principle that the educator should take care of present stages of psychological evolution and let future processes take care of themselves. Should not the above principle apply to the framing of the educational scheme from the kindergarten up to the university, so that the controlling factors in the curriculum may be the present and actual needs of the student, with a view to taking fullest advantage of previous educational training? The university has seldom shown a disposition to thus serve the educational needs of the individual. Curiously enough, the institution which ought to have changed most to expand properly the added potentialities stored in the ever-enriched mind of the child and the adolescent of to-day, is the one that has changed least. Not only this, but the university has directly influenced the spirit of the institutions under it and succeeded in forcing down its own interpretation of education.

Truly the university has rendered education the great service of first conferring on it a concrete and visible value. The spectacular triumphs of university education have made the university the educational institution "par excellence," and therefore its methods, aims, and results have tacitly become universal educational standards always to be taken cognizance of in educational pursuits. In this way the university has tended to perpetuate, to fix, and to consecrate, so to speak, the view that education should primarily be concerned with the possession of a certain amount of information. This is the reason why the university has controlled and is still controlling educational standards and educational values throughout all the educational organization.

In the secondary school of to-day, therefore, and, to a certain extent even in the primary school, knowledge-getting is still the prominent activity, throwing into the

shade all other activities more vitally concerned with the character-forming end of education. Information is what may be called the building blocks of the present system of education. Information is the factor that conditions the pupil's progress through school and is so far the only test universally accepted as a measure of the amount of education given or received. The curriculum, the textbook, the examination paper are the most important pieces of the educational machinery. And this costly and formidable machinery is not concerned, as one should think it ought to be, with the self-development of the student and the testing of the real progress of his personality, but solely with standardizing, circulating, and testing the amount of information a person has to receive in order to be worthy of the privilege of being educated by the State.

As it is, then, is not the secondary school still an anachronistic institution? The educational machinery has varied but little in essence from what it was a hundred years ago; the curriculum may have been enriched by the progress of science, but it still remains the official catalogue of facts the student has to acquire. The modern textbook may be more appealing than ever before to the thinking powers of the reader, but it is not the less a servant to dogmatism and an accomplice in maintaining the sway of authority. Both the curriculum and the textbook clearly proclaim that even to this day the important thing in secondary schools is memorization, not self-activity, and that although methods have been instituted that make the student use his reason in learning, the important thing is not the promotion of the educational activity for its own sake, but the supplying of the student with the information that is the outcome of such activity.

Says John Dewey:

"Any examination of the prevailing modes of instruction will show that the mere bulk of matter communicated in books and lectures tends to swamp the native and active interests operative in intelligent behavior and in the acquaintanceship it brings. There this matter remains unassimilated, unorganized, not really understood. It stands on a dead level, hostile to the selective arrangement characteristic of thinking."

Had the secondary school disconnected itself from the university, had it been obliged to respond, as it is beginning to respond to-day, to the demands of modern life, its conservative methods would have long ago been superseded by more liberal principles of education. To create and keep its patronage the secondary school would have appealed to the practical sense of the community, catered to the needs of modern life, somewhat in the way the modern public library is doing to-day. And just as the latter institution is throwing its doors open before a prospective reader, so the secondary school, free from university bondage, would have instituted countless schemes of attracting the prospective student. No price would be asked for such service, whose real recipient is the nation at large. None of the present petty restrictions that check free progress through school and are the survivals from an age in which all education was necessarily preuniversitarian would in such a case be tolerated.

Were the primary and secondary schools absolutely free to set forth their own interpretation of culture, education would have been organized on broader, liberal, and all-inclusive lines. The overwhelming cultural prestige of the university has made education retain much of its character as a system of organized restriction, just as when education had no meaning save as that of a preparation to a privileged position in an aristocratic society. Even to-day the term "educated class" is far from meaning what it should, namely, "normal men and women, intellectually, morally, and physically sound." It is suggestive of autocratic privilege, of something that, far from being accessible to every normal being, is precisely not within the reach of all.

But education should be within the reach of any person, for it is the complement to life itself. Education is not only a knowledge-giving agency, it is the maker of man

himself, and democracy can not afford the waste of opportunities brought about by the constant checking to which every one attempting to pass through school is subjected. The fact that out of 100 pupils entering the primary school only from 1 to 10 (according to countries) graduate from the high school shows a frightful waste, which, besides indicating lack of power to adapt institutions to the needs of the individual, works directly against the vital interests of democracy.

The salvation of the secondary school, therefore, lies in abandoning university standards in the valuation of primary and secondary education, in asserting positively its own standards of culture, founded in the perfection of those activities whose operation makes man attain his full spiritual stature.

Nothing is further from the purpose of this paper than the idea that knowledge should receive little attention in the field of education. In fact, knowledge could not possibly be separated from the process of education. Wherever there is self-activity, knowledge of some kind is sure to come as a result. Just as heat is the dynamic equivalent of physical energy, so knowledge is the intellectual equivalent of a useful psychic activity. Science is mind made, and has also made man's mind. Science is the specific subject matter to which the mind may usefully apply itself. It is the food on which the mind grows.

But if there can be no education without knowledge getting, there is a considerable amount of knowledge getting that does not promote a corresponding educational activity.

This counterfeit knowledge is the kind of knowledge resulting from undue stress on the knowledge-getting side of education. Such counterfeit knowledge is the result of dogmatism, and dogmatism itself is but the time-saving device more readily resorted to under the pressure of an educational system emphasizing knowledge getting.

It is particularly important to make clear the following considerations: Any system of education whose chief aim is the conveying of specific information is in danger of accomplishing that end at the expense of genuine educational training. A host of devices will soon make their appearance to serve the prime purpose of conveying information, neglecting the most important part of learning. The whole scheme of educational paraphernalia, of which the textbook is the most conspicuous representative, has been devised with the purpose of conveying information in a direct way thereby paving the road to dogmatism. On the other hand, an educational system whose only and deliberate aim should be the exercise of mental activities by applying them to the vast cosmorama of things and phenomena which surround us, would yield a wealth of information that would be far more beneficial to the student than if that information had been communicated in a direct way. In other words, if information such as can be elicited from the student through educational tests at present in use in the classroom and at examination time were always a conclusive evidence of a previous educational activity, there would be no harm whatever in accepting the former as the proper measure of and as an equivalent to the latter. But as long as it is possible to master the so-called knowledge by purely memory exertion it is evident that present methods that bring stress on the testing of such knowledge are sure to mean a constant defeat of the very ends of education.

Inasmuch as practice designed chiefly for the purpose of getting knowledge may be detrimental to education, and inasmuch as sound educational activities are invariably followed by the acquisition of genuine knowledge, the thing to do is so to organize the school activities that knowledge of the genuine kind may come as a result of the performance of such activities. In other words, if education is an inner process and not an outward result, the obvious need is to organize that process. Up to the present the school authorities have been busy organizing knowledge, not education. The school program of to-day is made up of carefully distributed information among the successive stages of school work. We have yet to devise a system of activities of really educational significance. The laboratory method has been a step in that

direction, but an immense amount of such organization, to make it consistent throughout, remains to be done in all departments of learning.

If the significant part of the educational process is in the act of putting the powers of the child in operation so as to automatically produce results that are physically and spiritually beneficial, then it may safely be said that the only educators worthy of the dynamic significance of the term are the kindergarten teachers, the manual-training teachers, the drawing teachers, and the teachers of physical training. They are not concerned with the transmitting of information for its own sake. They preside over an activity, the performing, on the part of the pupil, of a set of actions which science and experience have shown to be of educational value to the child. They let nature do the rest.

When we have planned the exercises a boy has to perform with the dumb-bells, we know that he will be better off physiologically and that he has added some oxygen to his blood. We trust nature then. But we seem to lack a corresponding faith in nature and in the pupil's power to enrich his intellectual store by the mere fact of his performing a set of intellectual activities. Yet this is exactly what must be done if a system is to be devised that truly responds to present conceptions of education. The slogan should be: "Let us train and let knowledge take care of itself."

When a set of occupations has been devised that will train the spiritual possibilities stored in man, we shall have a system of education which will be the intellectual and ethical counterpart to the many systems devised for building up the human body. Strangely enough, although many nations claim to possess their own systems of physical education, none has so far organized a system of intellectual education; that is, a system of activities that will bring out the latent individual powers of the child, the adolescent, and the youth, with all its sequel of rightly obtained information.

Three other types of educators should be included with those just mentioned—the playground director, the boy scout leader, and the organizer of any of those happy devices for training children in the practice of citizenship and the golden rule, introduced in the public school by Mr. Gill and in reformatories by Mr. George. They also preside over an activity and let nature do the rest. The superiority of their methods over those to which academic education still clings is shown by the fact that the moment educators forget that their mission is to train and let knowledge take care of itself, the moment they think they ought to lay the stress on the result rather than on the process itself—that is, the moment they think they ought to teach—the whole activity collapses, interest and life are gone, and the scheme soon shows unmistakable signs of sham and superficiality, which are as harmful to the moral character of the children as dogmatism is to their intellect.

A system of organized and correlated occupations should receive full recognition from the university. When we are ready to conceive and plan such a system, the problem before us will not be what kind of secondary schools we ought to have in order to fit them for the university, but rather what kind of university activities would be likely to continue, develop, and perfect the work begun at the lower educational agencies.

Free from the university bias, therefore, secondary education should be organized as a system of activities through which the pupil can not help but obtain by himself the information that we now pour into his mind through books and lectures. We will no longer entertain a quantitative view of the process; we will not ask the pupil what he knows, how much knowledge he has gained through the activities performed, any more than we measure the physical strength of the boy or girl with the perverse purpose of depriving the weaker of just the exercise they most need. We will trust nature this time and assume that any normal child performing the right kind of educational activities has necessarily gained the right kind of knowledge. Above all, we will not ask the child how much he has learned, because by so doing we put the teacher in the dangerous temptation to dogmatize, to give second-hand information

by short cuts, to reach the goal of knowledge by timesaving and education-saving devices. We have many of these at present. The very eagerness to teach exhibited by schools of any kind to-day stands in the way of real education and therefore of real teaching. Much has been said about faulty methods of teaching, but it has not been realized that it is university standards that have resulted in the organization of the very elements of dogmatism throughout the educational fabric. These elements are the textbook and the course of study, in the midst of which the free action of the conscientious teacher is sadly handicapped.

This paper could not possibly be considered a complete presentation of the subject if it did not include an exposé of the practical ways that might make possible the operation of such a system. Of course, it would be impossible to give here a complete program of the educational activities recommended. Yet it may be possible to indicate how, by shifting the conception of the essential part in the process of education, the very instruments that now are put sometimes to the service of dogmatism may be turned to wonderful implements of intellectual freedom; how, to be more precise, the textbook, which, as already implicated, often enslaves the mind to the authority of the printed page, may be turned into a help, a guide, an instrument of freedom for the mind. The books of to-morrow are bound to be just the opposite of those of to-day. They will not be screens that keep the realities of the world away from the student and make him dispense with the observing, analyzing, comparing, thinking. They will be real connecting links between the child and the world of concrete things and phenomena. Such books will organize the seeing, the measuring, the comparing, the discovering by the pupil. They will not confine themselves to the laboratory as humble laboratory manuals do to-day. They will take the pupil to the museum and ask him to sketch, to describe, to compare, to induce. They will take him to the Brooklyn Bridge and ask him to make a pen picture of the crowd, or they will take the boy and girl to the country road, the city park, the seashore, and ask them to describe such and such light effects, such and such contrasts of form. The observational powers of the child will be directed, educated, trained. Such books will also place the student before the masterpieces of art, both of painting and music, and will draw from the observer whatever power is at his command according to his individual temperament.

They will serve as keys to other books. They will direct the pupils to certain pages of certain books where conflicting opinions appear on historic events; they will direct the intelligent observation of the young writer to the wealth of language stored under the dusty covers of literary masterpieces. They will serve as keys to understanding the pupil's own mind, feelings, and volitions through the introspection of his own self. Truly there is no field of human learning where the child could not stand as man himself has stood before an unrevealed world. There is no avenue of life where the powers of the child could not be really educated in a nobler sense of the word. Unlimited possibilities lie before the editorial houses of to-morrow, as practically the whole present output of educational literature is waiting to be reshaped from the uninteresting, dogmatic, dead, and static way of the present day to the suggestive, quickening, and dynamic way of to-morrow.

To be sure, there is much important knowledge that pupils can not possibly acquire themselves. But, as Dewey remarks, "this transmitted material is likely to be fruitful in just the degree in which it is conveyed in connection with these activities in which the pupils acquire something through their observation and reflections." Therefore the business of the reformed textbook will be to interweave the transmitted information with the facts actually discovered by the pupil. Such books will therefore be something more than laboratory manuals, for they will bring together sets of facts wisely correlated with the activities engaging the pupil's observation, while in the humanistic arts they will open before the student lines of personal research and opportunities of self-expression.

In describing the textbook of to-morrow the idea has been to show what is meant by an education based on the organization of educational activities. No doubt such an education would not only "equip the child for life," but would enlarge the scope of human life itself. The present disadvantages of common education in regard to preparing the pupils for practical life are causing some reformers to blame the curriculum, on the ground that the kind of knowledge imparted by the average school of to-day is of little use in everyday life. Attention is therefore being directed to vocational activities as more apt to develop in the pupils the qualities that are at premium in the social market.

But in order to make the school vital and real it is not necessary to bring about a great change in the contents of the curriculum. It is the direction of its activities that makes all the difference. When education is interpreted in qualitative and functional terms, we fit the pupil for life, for we open his mind, enlarge his feelings, and train his will. He who as a boy has applied himself to the solution of the little problems that arise in the examining of a stone will perhaps be able as a business man to detect the causes of a rise in prices; he who discovers the important facts among irrelevant details or who affirms his faith in his judgment by having reached the truth by his own means is educating himself for life.

For the primary and secondary schools promotion should be based on the real democratic principle of equality of opportunity. As it is now, no value is given to the possession of the qualities that really distinguish the worth of men, such as love of work, quickness of perception, ability to plan, to observe, to discriminate, power of invention, and originality of procedure. The training of these is the most legitimate purpose of education, particularly in the formative periods of life. The primary and secondary school should be the places where all these qualities should have an opportunity to play. The maximum training of these activities, within individual limitations, should be the only just and democratic basis for promotion. Present methods of promotion based on the ability to retain facts learned in books introduce an utterly artificial standard only attainable by a minority. Such methods, therefore, can never be the basis of a democratic education in the true sense of the word. We see, therefore, that the method of education which emphasizes knowledge-getting as the chief condition of continuance in school is by its very nature incompatible with the idea of a secondary school devoted to the education of all the people, simply because the process by which the secondary school eliminates the so-called unfit is an artificial one, founded on the ability of the candidate to bring the memory into play and to submit to an unnatural way of getting information. Such is the basic reason why the percentage of failures is so great. Failure in education has no meaning save as a reflection on the efficiency of educational methods. From the point of view of the education of the individual, the idea of failure is irreconcilable with the idea of education, just as it is irreconcilable with the idea of life. What is now called failure is the outcome of an attempt to submit all to a process which only a few can successfully undergo.

An educational process, to be considered natural and therefore applicable to any normal being, has to be founded exclusively upon the fulfillment of such activities as are exercised with zest. This is the case with all activities that are of individual and social significance.

In the light of these considerations the question of the relations between the secondary school and the university has to be approached from a new angle. If the education conferred by the secondary school as defined above is the best that can be conceived, if such kind of education is sure to develop the pupil's qualities to the highest degree, it behooves the university to accept the new standards thus introduced by the secondary school in the field of education and to measure educational values in terms of activity instead of in terms of information. Assuming that the university is to be the place where only the best equipped are allowed to enter,

it devolves upon the university so to frame requirements for admission that only the best products of the secondary school can find a ready access to it. Furthermore, by accepting the secondary school standards instead of forcing its own, the university would render a further service to the cause of education by indorsing and consecrating, as it were, the new educational ideals. It is also evident that by enhancing the educational value of the qualities the world prizes most, those qualities the possession of which increases human efficiency in every walk of life, the university will be sure to assemble a selected student body better equipped than ever before for the pursuit of professional careers.

Just as in the Army, entrance requirements are founded on the degree in which the candidate shows he possesses the physical qualities that are necessary to an efficient soldier, so the university should accept from the secondary schools only those graduates whose mental and moral equipment indicates a high type of professional worker. The ideal secondary school, having organized its activities along lines that offer a perpetual play to the basic functions of the mind as well as to the qualities of character, should be prepared to furnish the university with a truthful estimate of each of its graduates. Present standards, founded on the ability of the candidate to memorize information, are far from providing a safe test for social efficiency.

The secondary school so conceived would prepare at the same time for life and for the university. It is by preparing for life that the secondary school would prepare for the university. It is by giving all boys and girls the opportunity to develop to the fullest extent the qualities that are of most worth in life that the secondary school on the other hand would prepare for life and comply with the ever-increasing demands of democracy. All pupils would be given the opportunity to develop within the limit of their individual capacities. Work calculated to bring out the mental qualities that are most useful in the battles of life should be the price of permanence in the school and the condition of promotion through it, as it is the price of permanence and promotion in society.

Automatically the secondary school would provide the university with an élite worthy of the privilege of becoming social leaders.

In conclusion, the secondary school should establish its curriculum on the basis of an organization of the intellectual and moral activities on whose development real education rests.

The mere fulfillment of such activities according to each one's ability should be the only factor in determining the permanence of pupils in school. This condition would automatically make secondary education a right to any boy or girl and a duty of the State to confer upon all boys and girls.

The range of activities in the secondary school should be sufficiently wide to afford an easy path for all pupils, according to their individual temperaments and vocations.

Normal schools and pedagogical departments should map out a correlated program of educational activities throughout primary and secondary schools. After such a plan has been successfully tried, a joint conference of educators from secondary and higher institutions should devise a new system of rating the merits of the graduates from the secondary schools based on a functional and qualitative estimate of the education previously received by the candidate.

The central idea of such a plan would be the organization of a comprehensive program of research and constructive work in language, numbers, science, and literature, to be performed by the pupils in primary and high schools. Such operations would increase in complexity through the grades and would cover all "subjects," the mere teaching of which is the aim of the educational machinery of to-day. It is hard to conceive of a more fruitful task for normal schools than the discussion of this problem with a view to agreeing upon an organic program of post-kindergarten "occupations" which should be both highly educational in their performance and yielding the kind and the amount of information demanded by modern life.

The CHAIRMAN. May I say just a word before asking Dr. Nelson to take his seat on the platform?

Out of the visions and calls such as you have just heard this morning in Dr. Nelson's paper have come more than once a new impetus and immediate reforms in a new education. Dr. Nelson has said that education is life, and that the fuller the living the larger the amount of education. There is an opportunity for the reorganizing of our education, not only in the elementary and secondary, but of the relation, at least the possibility of the new relation, of the university or college to the secondary school. I thought of a little girl who said to me one morning when she was starting to school: "Mr. Claxton, why can not we have in the school the things that are life?" and I said I had known of other people asking questions something like that. I have thought that an educational system of a country is not a thing to be played with like politics, or a pyramid to be looked at; nor an arch of which the university is probably the keystone, but it is rightly to be considered an organic thing that grows, which develops, which has life in it, has a pulse beat and a flow of blood. In this organism the high school is the heart. In the United States our school system has been weak because of the weakness of the heart. If the heart be found weak the whole body is weak. In the United States we have come to the conclusion that there shall be as a part of the program for better educational methods better secondary education, the education through the early and middle years of adolescence for all boys and girls of all the countries. I have found that this sentiment is held very generally from ocean to ocean, and it is easily possible that the conception of secondary education that Dr. Nelson has given shall materialize.

I now take great pleasure in asking Dr. Nelson to preside for the remainder of the session.

Hereupon Dr. Nelson took the chair and announced the titles of the remaining papers for the program of the morning:

El porvenir del panamericanismo, by Peter H. Goldsmith.

Los fines de la enseñanza secundaria, by Juan Monteverde.

Enseñanza médica, by Teodoro Muhm.

EL PORVENIR DEL PANAMERICANISMO.

Por PETER H. GOLDSMITH,

Director de la División Panamericana de la Asociación Americana para la Conciliación Internacional.

¡La Europa, el Asia, el Africa! ¡Indeciblemente desgraciados los tres viejos continentes! ¡Desgarradas vuestras entrañas por la prodigiosa ciencia moderna dominada y dirigida de salvaje odio! ¡Bañadas vuestras pobladas playas por aguas enrojecidas

con la sangre vanamente vertida de devotos hijos vuestros! ¡Qué horrendo escarnio de todo aquello que, durante los cristianos siglos, se ha enseñado y aplaudido!

Solemne, crítica, funesta es la hora en que marchitas se ven las predilectas profecías de poetas, de predicadores y de pacifistas profesionales. Sobre escenas de inolvidable matanza brilla el sol reprobador del naciente siglo, del que se había lisonjeado tanto durante sus primeros años.

El llanto de la mitad del mundo ilustrado persigue al paciente oído del cielo, mientras que el corazón de la otra está todo de luto. Por doquier se sienten los portentosos efectos de la trágica e interminable lucha. De las insaciables garras del ensangrentado Marte, no se salvan ni los tiernos e inocentes párvulos ni los decrepitos ancianos de nevadas y venerables canas.

Tiembla el orbe entero con el tonante paso de las innumerables huestes que se diezman y se sacrifican, útil o inútilmente, bajo los varios pabellones enarbolados so pretexto que hasta ahora parecen todos inverosímiles.

¿Qué de nosotros, los neutrales de este hemisferio, ante la estupenda conflagración europea? ¿Nos jactaremos quizás de la afortunada condición en que hoy nos encontramos, gracias a nuestra aislada posición geográfica? ¿Somos tal vez mejores, más morales, más pacíficos que nuestros semejantes de aquel lado del estrecho mar? ¿Estamos acaso fuera del alcance de análogo cataclismo? ¿Qué de Bélgica y qué de Serbia? ¿Es que no puede lanzarse sobre nuestras playas el mismo océano de envidia, de odio y de aniquilamiento?

Todo dependerá de lo que hagamos hoy día y de hoy en adelante.

Ante el espantoso y agotante terror—el inconmensurable vaivén de ese vasto mecanismo, característico de la guerra actual, que se hunde tanto bajo las traidoras olas del acuoso abismo, cuanto bajo la faz de la sólida tierra para efectuar sus designios destructores, y hasta invade y profana los puros aires del cielo con sus infernales máquinas en busca de humanas víctimas—nosotros de toda la América nos hallamos pasmados, consternados y penetrados de compasión, a la par que impotentes y casi desvanecidos, como con las manos atadas, y con el solo recurso de mirar, lamentar y esperar profundamente conmovidos.

Tal es la presente situación, como se manifiesta a los individuos de visión amplia y espiritual.

Mas de todo eso dimana un resultado consolador. En presencia de la catástrofe universal, los que estamos salvos de ella nos acercamos unos a otros, como por instinto; y se disminuyen y desaparecen nuestras antiguas diferencias, sospechas y antagonismos, de tal suerte que nos sentimos verdaderamente unidos y solidificados por fuerza de la simpatía, asombro y desesperación que nos ha causado el mundial desastre. Se nos han revelado nuestras humillantes flaquezas. Comprendemos ahora que lo que sucede allá bien pudiera haber ocurrido aquí. Nos enseña a los americanos todos cuán preciso es poner en orden nuestra propia casa; quitar de nosotros cualquiera causa de perturbación y de recelo que exista entre una y otra nación de nuestra libre y querida América, y entrar en relaciones de productiva amistad y cooperación internacionales que dictan la razón, la prudencia y la verdadera moral económica.

Por destructivo y fatal que haya sido el año pasado y siga siendo actualmente para los viejos continentes, y por trastornador y triste que se manifieste para los nuevos, debe reconocerse, en medio de todo, que ésta es también la época más cargada de beneficiosas lecciones y oportunidades internacionales que jamás se haya experimentado en nuestro hemisferio. Entre ellas sobresalen las que a continuación se nombran:

Que ningún pueblo existe ni puede existir en aislamiento internacional, cualquiera que sea su deseo o su esfuerzo para conseguirlo y conservarlo. La multitud de invenciones del ingenio humano ha obrado para el aniquilamiento del espacio, la disminución de las distancias terrestres y la conquista y destrucción de todas las barreras materiales que hasta ahora han separado a los hombres; y ha efectuado en seguida la unificación de la humanidad. La telegrafía y la telefonía, tanto alámbrica cuanto

inalámbrica, han establecido inmediato contacto intelectual entre los pueblos; los inconquistables ferrocarriles han penetrado con sus lucientes cintas de duro acero en las regiones más retiradas y primitivas, para despertar allá con el rumor de sus crudas máquinas a los soñadores y hacerles percibir que ellos también pertenecen al gran mundo activo y que a todos precisa palpitar en armonía con él; los enormes y veloces vapores, ya cual poblaciones flotantes y nómadas, ya cual graneros y mercados ambulantes, orillan todas las playas y visitan todos los puertos; la prensa escudriñadora y fecunda, el minucioso y fiel correo y el atrevido viajero comercial, difunden hasta los confines de nuestro planeta, no solamente cuanto dondequiera se hace, se dice y se sabe, sino también cuanto se imagina, se adivina y se murmura; y los intereses financieros, los créditos internacionales, los intercambios de capitales, y las fluctuaciones de valores monetarios, todo ha terminado por crear la solidaridad involuntaria y desapercibida de la raza entera. Ya no es cuestión de deseo o voluntad de gobernantes y de pueblos; la solidaridad internacional está consumada, existe y se reconoce en todo país; es tan inevitable como lo es la solidaridad nacional o municipal. No ha originado en los pensamientos e intenciones de los senados nacionales gubernativos, ni en la febril elocuencia de las conferencias internacionales pacifistas, por útiles y efectivos que fuesen, sino que ha surgido de un manantial más natural y más profundo; es resultado de una necesidad exigente que nada perdona, y que se siente ahora dondequiera que se encuentran los humanos: la necesidad económica; y de un sentimiento, tan extenso y tan innegable y, por último tan imperioso y vencedor como la necesidad referida: el sentimiento social, cuyas raíces se radican en lo profundo del corazón popular. Ante estas dos inmensidades nadie ni nada puede regirse por luengo tiempo!

Lo ha revelado la misteriosa guerra presente. Toda nación, por remota que esté del furibundo foco de iniquidades que ha desarrollado el insaciable Marte, es afectada por él, y padece de los trastornos, tanto económicos cuanto intelectuales y morales, que de él proceden.

Preciso es reconocer que, en general, los pensadores, quienes son los directores de la opinión pública, determinan la política de las naciones, y si su modo de pensar es limitado, provincial, egoísta, qué infelices serán las relaciones que habrá de existir entre uno y otro pueblo!

El más infausto crimen intelectual y moral de las agonizantes centurias desvanecidas es el de pensar en términos demasiado reducidos, términos de familia, tribu o nación, de raza separada, de localidad o provincia, de denominación, profesión, clase o estrato social, de egoísmo, prejuicio, y de sospecha, envidia y odio internacionales. Esto también lo ha revelado la guerra. Sólo se requiere mencionarlo para que se vea comprobado. En cada una de las naciones beligerantes, desde los gobernantes hasta los más humildes e ingnorantes obreros, se había limitado la visión a considerar las condiciones e intereses propios, interiores y domésticos. Casi ninguno se fijaba en la amplitud de los movimientos económicos y de los sentimientos sociales. Además, este provincialismo intelectual no se limitaba a los que se encontraron cogidos en las garras de la horrible lucha. Nosotros, afortunadamente salvos de ese desastroso huracán, pensábamos de modo análogo. Todo pueblo americano se limitaba a sí propio, sin comprender que la seguridad, la felicidad y el éxito de este hemisferio necesariamente dependerían del modo de pensar de cada nación que en él se había radicado. De nuestra manera de pensar provincial resultó, en primer lugar, la falta de informes confiables sobre la verdadera situación europea antes del rompimiento; y en segundo, la criminal indiferencia que ha caracterizado las relaciones habidas entre los pueblos de este hemisferio. Si hubiéramos poseído los informes debidos, sin duda que podríamos haber evitado gran parte del trastorno económico que ocasionó la guerra y que aun hasta ahora se deja sentir; habríamos tomado medidas para entendernos más íntimamente los de estos continentes americanos, y para estrechar las vinculaciones sociales, comerciales e industriales; habríamos olvidado los vanos antojos,

recelos y antagonismos que a veces nos habían separado; habríamos adoptado anticipadamente el lema de todos para uno y uno para todos; habríamos reconocido que, a pesar de las diferencias y causas de queja, la existencia de las cuales ningún inteligente se atrevería a negar, abrigamos todos el mismo espíritu, la misma imperiosa necesidad económica y política y el mismo temor devorador de perder la preciosa libertad que tanto costó a nuestros antecesores.

Que entre el Viejo y el Nuevo Mundo existe un abismo tanto más ancho y profundo que el mismo Atlántico, abismo social y espiritual que divide y sirve para distinguir entre dos ideales, dos sistemas: uno de ellos monárquico, autocrático, oligárquico, centralizado, secreto, egoísta, que se opone al espíritu unificador del siglo, a la democracia y a la libertad; otro sintético, en armonía con las leyes y los procedimientos de la razón, natural, liberal, ameno, persuasivo, paciente. No se niega, con decir esto, que se hallen representantes de los dos sistemas en uno y otro mundo; que allá se vean muchos individuos imbuídos de ideas novocontinentales, y que acá, otros muchos reaccionarios, impiden el verdadero progreso humano con su indiferencia o egoísmo; pero sí, se mantiene a todo alcance que clara y perceptiblemente se distinguen esos dos ideales, y que a uno de ellos se adhiere la máxima parte de los pueblos de Europa, mientras al otro queda devota la misma proporción de los de América. Este abismo empezó a abrirse poco después de la llegada de los europeos a estos continentes, y ha seguido ensanchándose cada vez más con el transcurso de los siglos; pero hasta que la funesta luz de la universal conflagración lo iluminó por completo, no se reconoció con entera claridad todo lo que implicaba esta separación.

Como corolario de este hecho ya bien reconocido consta lo siguiente: que a medida que se han visto separados los pueblos del Viejo y del Nuevo Mundo, se aproximan unos a otros los de cada una de las aisladas porciones del orbe. La de semejanza hace pensar en la semejanza, y causa además la aproximación de los elementos similares y geniales, en los que reside una afinidad natural y fundamental. El monarquismo y el militarismo de allá tienden a hacer unirse los pueblos libres y pacíficos de acá. Púedese decir, por lo tanto, que la luz fatal de la enorme conflagración europea ha revelado no sólo el abismo abierto por largo tiempo entre los dos ideales de la civilización, sino que ha demostrado también la presencia y fuerza activa de ideas y sentimientos unificadores, radicados en el corazón de las nuevas y maleables naciones de este naciente organismo que se compone de 21 libres e independientes soberanías populares. Ha señalado otra verdad aun más importante, a saber, que mientras las involuntarias uniones y alianzas políticas contranaturales resultantes del ejercicio de fuerza superior por parte de los elementos preponderantes sobre los inferiores y más débiles en sentido material, abrigan en sí propias las semillas de desorganización y destrucción, el reconocimiento de afinidades espirituales y de similitud de ideas produce interacción y cooperación duraderas a fuer de ser naturales, libres y voluntarias.

Que precisa, ahora más que nunca y más que lo que pueda suponerse en lo sucesivo, alinear en sólidas y disciplinadas filas las huestes de libertad y progreso que pueblan e ilustran aqueste lado del salubre océano. Hemos perdido ya una infinidad de tiempo, de energía y de tesoro con nuestros recelos, temores y luchas, fruto todo de falta de entendimiento y aprecio y de malquerencia, envidia y codicia. Ante el amenazante peligro que asoma a lo lejos, ¡ay de la nación, por diminuta y débil o colosal y poderosa que sea, que se deje engañar con el susurro de los cismáticos internacionales, y rehuse oír la encantadora voz de sus hermanas que procuran atraerla hacia la saludable y productiva armonía! Y ciertamente esto no debe considerarse como amenaza de castigo que la pudiesen administrar las demás naciones, sino como amonestación que surge de la buena voluntad de la familia de naciones libres cuyo único deseo es el de salvar a cada uno de los pueblos componentes de los infaustos efectos nacionales de la intransigencia y el aislamiento voluntarios. La nación que, por cualquiera causa, se niegue a tratar con justicia y aprecio a sus hermanas, a

amoldarse y a armonizarse con ellas cuanto le fuere posible, no las ofende así ni las hiere a ellas: es ella la que sufre, la que pierde y la que se destruye a sí misma. El ermitaño nacional, cual el individual, lleva una vida no tan sólo contranatural sino estéril y moribunda.

Basta ya de generalidades. ¿Cómo y en que sentido nos alineamos? ¿De qué manera y hasta que punto podremos enlazarnos las soberanas e independientes entidades de la América? ¿Será en una unión política o en alianzas defensivas y ofensivas, o por ententes múltiples? ¡Pluguiese a Dios que no! ¡Mírese la actual Europa! ¡La concordia no se funda en papel o pergamino, por bien escrito y firmado que esté, ni en la fuerza, por inmensa y potente que la haya! Esto lo ha demostrado con cruel claridad la guerra mundial. El porvenir de la América debe depender de nuevos ideales y actitudes internacionales, basados todos sobre esa honradez, esa justicia, ese entendimiento y aprecio mutuo, y esa cooperación intelectual y material, que dictará una fructífera política internacional americana. Ante este sistema desaparecerá para siempre el mentado y venerable monroísmo, por útil y protector que haya sido en lo pasado, con la infinidad de celos, desavenencias, temores y trastornos que ha causado o que se le han atribuido, y en su lugar se erguirá firme y espléndida la verdadera doctrina americana, establecida con el alegre consentimiento e interacción de naciones iguales en el sentido de soberanía independiente y de derechos internacionales.

Esta amplia, justa y satisfactoria doctrina, ¿cómo se entablará? ¿Quizá por medio de congresos panamericanos? Los hemos reunido ya, y si no han sido del todo inútiles, no han producido el fin anhelado. No; la diplomacia, la discusión y el buen deseo no carecen sin duda de valor; pero algo más natural e íntimo se requiere. La aproximación y la amistad de los pueblos demanda un procedimiento semejante al mismo que sirve en la experiencia de los individuos. La amistad individual se funda en los procesos naturales, y no es resultado de la legislación.

Si se analiza una larga y verdadera amistad e intimidad entre personas, se reconocerá desde luego que aquéllas se han fundado en lo que bien puede llamarse factores ordinarios, como lo son el trato social, comunidad de intereses, afinidades intelectuales y estéticas, y en fin, todo aquello que revele las cualidades del espíritu humano. En la asociación de individuos entre sí, cada uno de ellos contribuye de cierta manera con algo de la riqueza de su propio ser, de su experiencia y de sus ideas características y predominantes, las cuales pueden asemejarse a los hilos de distintos colores que entran en el tejido de que se fabrica el bello manto grato y protector de la amistad. Débese reconocer, por lo tanto, que las intimidades individuales son accidentales, casi involuntarias y, sobre todo, naturales y no artificiales. En la sociedad general las sinceras relaciones humanas no se establecen por regla ni por convenio, ni tampoco de intento, ni mucho menos por interés personal; sino se basan en aquel respeto y estimación que resultan del reconocimiento en otras personas de cualidades admirables.

Puédnes considerar los pueblos como una individualidad infinitamente extendida y prolongada. Así es que para establecer buenas relaciones entre ellos sólo precisa aplicar aquello que nos haya enseñado la historia de las amistades personales. Al principio el forastero nos extraña, su apariencia, su idioma, sus costumbres y sus ideas y sentimientos, todo nos causa cierta perturbación y hasta nos llega a chocar. Mas poco a poco, bien con la adquisición de mejores conocimientos, bien con la percepción de que lo extraño no es necesariamente inferior a aquello con que se está familiarizado y que se estima, sino, al contrario, que se ha manifestado admirable y deseable, desaparecerán las preocupaciones, el asombro y los celos. Análoga es la experiencia de los pueblos. Bien se podría sostener que la mayor parte de los disgustos y las repugnancias internacionales se ha fundado en meras superficialidades, las cuales se desvanecen con trato y asociación íntimas, y en su lugar reinarán respeto mutuo, confianza y amistad. Prueba de esto existe en la experiencia de todas las

personas que se hayan dedicado a visitar muchos pueblos y a tratarles hasta llegar a hacerse entender y respetar entre ellos.

Es por demás llamar la atención al hecho de que cada nación abriga en sí misma excelencias y defectos característicos. Lo bueno y admirable de un pueblo se ve compensado por cualidades laudables en otro, y lo defectuoso y censurable de aquí encuentra semejanza allá. Poco le conviene pues a cualquier pueblo jactarse de que excede a otro en virtudes, o que le supera en que a sí propio le faltan defectos patentes, puesto que uno y otro aparecen en la categoría tanto de los morales, inteligentes, útiles y generosos, como en la de los malvados, torpes, improductivos y mezquinos.

Es clarísimo de todo esto que hay urgencia imperativa de cultivar y ejercer una paciencia y generosidad no tan sólo individuales y nacionales mas también internacionales. El reconocimiento de la universalidad de la distribución de las imperfecciones y de las excelencias humanas debe engendrar un sentido de camaradería mundial. Si la larga política de cada nación, que constituye su vida particular y característica, abunda en extravíos, imprudencias e injusticias de cierta índole, ¿por qué y con qué sombra de razón puede otra echárselo en cara, mientras que ésta haya pecado de su mismo modo, aunque tuviera el solo mérito de haber variado en la manera de errar?

¿Cómo, bien puede preguntarse, se va a enseñar y a infundir esa caridad y generosidad internacionales?

El estado primitivo del hombre individual era de egoísmo. Los primeros salvajes echaron mano a todo lo que pudieron asir. Luego los intereses de la familia y en seguida los de la tribu operaban para limitar la voluntad individual y sujetarla a lo que se consideraba el bienestar de la comunidad. Cuando las tribus se vieron obligadas a reforzarse contra sus amenazantes enemigos, formaron entre sí alianzas naturales, a saber, las que se fundaron en la proximidad geográfica o consanguínea, y de ahí originó la nacionalidad.

Este proceso de formar naciones no era tan sencillo como pudiera aparecer al delinearse. Se extendió por largos períodos de tiempo, durante los que había muchas y crueles luchas destructoras que acabaron con gran número de individuos y de pueblos. La historia del ascenso de la humanidad de un estado de barbarismo a uno de civilización pudiera trazarse por senderos de horrenda sangre y sufrimiento.

Pero, al confesar esto, ¿habrá que admitir que esta condición de barbarie y de salvajismo es propia, natural, duradera e inevitable de la raza humana? Ciertamente que no. Tratándose de individuos se reconoce desde luego que el dolo, la esclavitud, el salteamiento, y la crueldad para con los niños, los ancianos y las mujeres han desaparecido casi por completo en cualquier nación civilizada, gracias a las influencias restringentes y disciplinadas de la religión y de la educación moral.

Ahora bien, puesto que toda nación americana se compone de unidades y su carácter general como entidad social depende inevitablemente del total de las cualidades que abriga cada una de aquéllas, el pueblo se desarrolla y se hace inteligente, justo y generoso a la par que se mejoran los ideales y la conducta de los individuos que se unen para formarlo. La política nacional e internacional es sólo la expresión amplia y más o menos artificial de la moral individual. Para cambiar las relaciones entre los pueblos y hacerlas consideradas y justas hay que acudir, en último término, a los individuos y principalmente a los que influyen en cada nación para infundir en ellos los ideales que deben dominar la política de los gobiernos.

Hasta ahora la enseñanza escolar, tanto pública cuanto privada, se ha dedicado en general a asuntos académicos, prácticos o profesionales, relacionados enteramente con un sólo país, y no se puede negar que esto haya sido natural y conveniente; sin embargo, en vista de lo ya dicho, que ningún pueblo vive en aislamiento y para sí mismo, es preciso además organizar una instrucción nueva, de espíritu y amplitud mundiales, que haga de cada alumno de este hemisferio, no solamente patriota y

sostenedor leal de su propia nación, sino también ciudadano novocontinental, en el sentido más extenso y profundo.

Al dar énfasis a la idea de una ciudadanía novocontinental intelectual, débese llamar la atención a que eso se hace sin perjuicio de los pueblos de los continentes antiguos.

Mas los alumnos no son los únicos con horizonte reducido que precisa extender. Mientras no exista una generación de personas ya hechas que hayan recibido instrucción suficientemente amplia para relacionarse con sus contemporáneos de toda la América, habrá que buscar un modo de infundir aún en ellas mismas las simpatías y los ideales internacionales. Los individuos ya formados son los que determinan la opinión pública y los que dirigen la política de los gobiernos actuales. ¿Cómo se puede libertar a éstos de sus antiguos prejuicios y, en cambio, sembrar en su mente respeto y confianza para con sus vecinos de las diversas naciones americanas? ¿Esperar hasta que desaparezca esta generación y se produzca otra de mejores pareceres y sentimientos internacionales? Apenas se necesita responder a tal pregunta. Al exponerla lo absurdo que es se manifiesta.

Por rígidos e intransigentes que sean, los hombres ya crecidos no son del todo impenetrables, ni se endurecen para siempre contra las ideas nuevas y más liberales de las que ellos se habían acostumbrado. Requíerese pues lo que es difícil mas no imposible de efectuar; descubrir con delicado tanteo el modo de presentar y de exponer con incansable afán unas ideas y procedimientos que, por su sencillez, su razonabilidad y su sinceridad, abarcarán en sí propios el poder de la convicción irresistible.

¿Cómo y por medio de qué agencia pueden difundirse esos ideales internacionales? ¿Cómo se fomentarán, y cómo se habrán de nutrir a través del largo período de tiempo requerido para radicarse y cobrar bríos?

No es preciso convertirse en otro Diógenes de Sínope e ir recorriendo el mundo con linterna ni con foco eléctrico para descubrir un hombre o un grupo de hombres que lleve la antorcha de la nueva hermandad americana. Ninguna nación de nuestros continentes carece de individuos que reconocen la urgencia de que se entiendan más profundamente los pueblos de América, ni de instituciones que sirvan de instrumentos para avivar y guiar el espíritu de la fraternidad internacional.

No se niega que los Gobiernos y sus representantes diplomáticos y consulares influyen en el mejoramiento de las relaciones internacionales; pero necesariamente son tan rígidos, formales, artificiales y conservadores y a veces tan cobardes y egoístas que no les conviene ser los protagonistas de ese movimiento. Los gobiernos y sus representantes, en vez de guiar a los pueblos respectivos, se ven generalmente arrastrados por ellos. Inficianse en el corazón de las naciones los mandatos morales. Aquello que determina y dicta la mayoría organizada de los pensadores activos de una nación, que le sirven de cerebro directivo, constituye el verdadero dictamen nacional, y ante esto doblan la rodilla los gobernantes.

De todo lo expuesto es claro que la gran empresa de ampliar la visión de los individuos de que se componen los pueblos americanos, no depende en absoluto de los gobiernos, sino también de los directores e instructores de las instituciones de educación, tanto públicas como particulares, de la prensa, de los escritores, de los poetas y profetas, de las asociaciones sociales, científicas, literarias, profesionales, y en fin, de todos los que piensan libre y profundamente en términos continentales y humanos, adivinan el glorioso porvenir que espera a la América cuando se encuentre disciplinada, propiamente relacionada y cooperadora, y con inagotable paciencia se esfuerzan vigorosamente por conseguirlo.

Dicho se ha que en todas las naciones de este hemisferio se encuentran ciertas potencias latentes que precisa utilizar para el bien de la gran familia que puebla estos continentes. En ellas se reconoce claramente la insensatez, el desprecio y los destrozos económicos que resultan de los recelos, las discordias y las luchas inter-

nacionales, mas no se sabe cómo dar énfasis y expresión a las sanas ideas y aplicarlas a la política nacional a fin de evitar los odios y los trastornos, estableciendo las relaciones debidas entre todas las naciones.

Germinal en el corazón del soñador idealista cierta desesperación al ver cuán difícil es encarnar sus nobles pensamientos en movimientos y organizaciones enérgicas y eficaces. Se siente solitario e inútil: su visión y aspiración parecen sólo un ensueño que jamás se realizará por cuanto se anhele.

Necesítanse en nuestro hemisferio ciertas agencias organizadoras, inteligentes, intachables, generosas, de amplia visión e imaginación, que por lo sano y laudable de sus procedimientos, se conquisten el respeto y la cooperación de todas las fuerzas sociales e intelectuales de nuestras diversas naciones, cristalizándolas así en una sólida y eficiente opinión pública capaz de animar completamente la actitud de los poderes y la legislación gubernamentales. Esas agencias deben ser organizaciones altruistas, salvas de motivos siniestros, que nada pidan y nada deseen sino la oportunidad de ayudar, aprender y organizar, animando hábilmente y guiando a los que aspiran a dedicarse a esa gran empresa y a mediar entre los pueblos para el estrechamiento de las vinculaciones intelectuales y espirituales que deben ligar a todas las naciones de América.

Dichas empresas, aunque se originen en un sólo país, deben extenderse por medio de un proceso natural a todas las naciones de nuestro hemisferio, no como organizaciones egoístas y rígidas, sino como fraternidades cooperadoras internacionales, relacionadas con los varios movimientos educadores, con las asociaciones científicas, literarias e históricas, y con todos los grupos de pensadores y trabajadores sociales e intelectuales que, con leantada frente, se consagren a la noble causa de contribuir al bienestar de los diversos pueblos de estos continentes, de quienes depende en tan alto grado la felicidad del resto del mundo.

Existen actualmente las anheladas agencias, de carácter universal, de espíritu liberal y llenas de buena voluntad para con todos los pueblos. Entre otras pueden indicarse importantes organizaciones como la Unión Panamericana, la Dotación Carnegie para la Paz Internacional, la Asociación Americana para la Conciliación Internacional, la Asociación Peruana de Derecho Internacional, y la Sociedad Venezolana de Derecho Internacional. En estas instituciones y otras afines, reside inmensa potencia y energía moral. Requírese tan sólo que cooperen unas con otras y que procuren todas influir en la masa de los pueblos, para adoctrinarnos no solamente en el patriotismo, sino también en el verdadero internacionalismo, que representa sin duda la moralidad humana en su más amplia y noble acepción.

Si un congreso internacional y científico como éste, encarna algo de útil y significativo, ello reside en su eficacia como instrumento adecuado para relacionar propiamente a los pueblos. Un congreso internacional es útil en cierto modo para el conocimiento y aproximación de un reducido número de individuos excepcionales; pero ejerce poca influencia sobre la gran masa de elementos sociales heterogéneos de que se componen las naciones. La educación, día tras día, la reiteración variada e insistente de esta doctrina simbolizada en forma comprensiva, son los únicos factores eficientes para este resultado. He allí la tarea de los colegios, las universidades y las instituciones diplomáticas, científicas, sociales y humanitarias, a las cuales corresponde la noble y grave responsabilidad de instruir al pueblo de manera tan enérgica y tan diestra que venza gradualmente la ignorancia y los prejuicios, infundiéndolo al fin el anhelado espíritu internacional panamericano.

Ha de empezarse con los niños esta labor indispensable para el ensanchamiento de las ideas. En ellos, y no en los hombres formados, reside la potencia panamericana. Todo aquel que se interese en el porvenir de América debe dirigirse a la juventud con paciencia y destreza, y cosechará así en vida, el galardón que premie sus esfuerzos.

LOS FINES DE LA ENSEÑANZA SECUNDARIA.

Por JUAN MONTEVERDE,

Profesor de Ingeniería Sanitaria de la Facultad de Matemáticas de Montevideo, Uruguay.

I.

La instrucción pública debe darse en diversos grados, puesto que así lo exigen las actividades sociales y las diversas funciones de los elementos que en ellas intervienen; y lo exige también la propia instrucción, que no puede ser eficaz, para sus fines, si no es recorrida en forma gradual y en diversos ciclos limitados por su aplicación social, y que favorezcan su acción en la educación del espíritu.

En la práctica se considera la enseñanza general dividida en tres grados: la primaria, la secundaria y la superior. Estas tres divisiones constituyen los grandes ciclos de la enseñanza general, cuya esfera de acción, métodos, clase y extensión de los conocimientos de sus programas deben estar en relación con la edad de los alumnos y con el fin de la enseñanza de cada ciclo o grado.

Estos grados de la enseñanza no están igualmente organizados en los distintos países, si bien pueden establecerse ciertos principios fundamentales que determinan una organización racional, adaptada a las exigencias de las sociedades civilizadas, en cuanto a su cultura y al más económico aprovechamiento de la enseñanza. La uniformidad de la enseñanza para todos los países, prácticamente no sería posible ni conveniente, puesto que las condiciones del medio, los recursos y las necesidades a que debe satisfacer la instrucción general varían de un país a otro.

Las necesidades de la vida civilizada, la acción individual y colectiva de sus elementos, la condición social, dotes intelectuales, recursos y aspiraciones de esos elementos son los que determinan preparaciones distintas en su instrucción, y su ascenso o detención en cada uno de los grados indicados de la enseñanza general.

Los individuos que en el organismo social desempeñan las funciones más elementales, más subordinadas, que requieren principalmente la acción muscular, no tienen porque estudiar más allá de la enseñanza primaria, ni por otra parte podrían hacerlo con sus recursos propios, salvo rarísimas excepciones: aquellos que, por su situación o sus medios de vida, aspiran a intervenir en funciones sociales que requieren una instrucción más avanzada que la primaria, cierta cultura general, literaria y científica elemental, necesitan adquirir los conocimientos de la enseñanza secundaria: y a la superior deben dedicarse los que, por sus dotes intelectuales y su amor al estudio, aspiran a las funciones que requieren una elevada preparación mental, sea para cargos públicos, sea para el ejercicio profesional, sea para contribuir al adelanto de las ciencias, de las artes y de las letras en sus más altas manifestaciones.

Es base de la enseñanza secundaria, la primaria, y ambas deben servir de fundamento a la superior: éste es un principio que no admite excepción, si se reconoce el concepto de gradación lógica y pedagógica de la enseñanza general, fundado en el máximo de utilidad social con el máximo de economía en energías y en gastos; sin embargo, en muchos países ese principio no se aplica estrictamente en la práctica, pues los hay que admiten el ingreso de alumnos a los estudios secundarios, sin la obligación de haber completado primeramente los de la instrucción primaria; como los hay que admiten el ingreso a los estudios superiores con una instrucción secundaria deficiente. Estas deficiencias en la preparación de los alumnos son muy perjudiciales para la enseñanza.

Aun los países que más se han preocupado de la enseñanza pública, no han llegado todavía a un plan de organización y de coordinación de los estudios, en su conjunto, desde los inferiores hasta los superiores.

En la práctica se han encontrado serias dificultades para esa organización del conjunto de los estudios, principalmente en los países de cultura más avanzada, debido a preocupaciones, prejuicios y hasta a cuestiones de amor propio, de autoridades,

instituciones, profesores, funcionarios demasiado apegados a la tradición; y debido también a la modalidad de su espíritu, educado en ideas diversas de las que rigen actualmente la vida social.

Para el mejor éxito y el más económico aprovechamiento de la enseñanza, en todos sus grados, es necesario que haya un enlace, una relación de continuidad y de graduación lógica y pedagógica entre los diversos períodos de los estudios. A esa mejora hay que llegar en los planes de estudios, programas y reglamentos que rigen los diversos grados de la enseñanza; aunque no siempre sea la realidad, se supone que los alumnos que ingresan a los estudios secundarios han hecho los primarios, y que tienen los conocimientos de ambos grados de los estudios los que ingresan a los superiores.

La enseñanza primaria no tiene porque variar sensiblemente de un país a otro en los centros de población, puesto que, bien entendida, debe comprender el mínimo de conocimientos que se considera necesarios para que cada individuo pueda desempeñar con independencia y provecho las funciones más elementales en el organismo social en que vive: en las regiones rurales debe adaptarse lo más posible al medio, tendiendo a una instrucción práctica y de real aplicación a las actividades que la economía nacional aconseje estimular.

En cambio la enseñanza secundaria puede diversificarse según los países y según su aplicación, y en cada país debe variar según las condiciones especiales de las regiones, sobre todo si éstas tienen un carácter especial bien definido por la actividad habitual de sus habitantes. Esta diversificación y aplicación de la enseñanza secundaria constituye el tema que me propongo desarrollar.

II.

La instrucción, como todas las formas de la actividad humana, ha seguido la ley de la evolución hacia su perfección: hasta finalizar el segundo tercio del siglo pasado, la aspiración más vehemente de los Gobiernos de los países civilizados era difundir lo más posible la instrucción elemental: la instrucción media, más que de cultura popular, era de preparación para la enseñanza superior.

La mayor difusión de la instrucción pública y el progreso de las ideas elevaron el nivel intelectual de las clases populares, poniéndolas en condiciones de ejercer con más conciencia y más eficacia sus derechos en favor de su propio mejoramiento y en la constitución de los gobiernos: se reconoció, y se hizo más efectivo y más universal, el derecho de los más inteligentes y de los más preparados para aspirar y obtener por sus méritos los puestos directivos de la vida nacional.

Para satisfacer las justas aspiraciones de las clases populares, relativas al ejercicio de sus derechos políticos y sociales, para extender la cultura de esas clases, e intensificar y mejorar su acción en el progreso nacional, los Gobiernos difundieron la instrucción secundaria, tratando de darle un carácter más apropiado a esos fines.

Las democracias exigen una instrucción moral y cívica suficiente, y una preparación intelectual más extendida, más perfeccionada y más homogénea que en las formas de gobierno menos adelantadas: en primer lugar, porque a los más elevados cargos públicos puede llegar cualquier ciudadano que reúna las simples condiciones legales, y éste requiere, por lo menos, la preparación que deben dar los estudios secundarios; y en segundo lugar, porque, aun como simple elector, todo ciudadano conviene que tenga una instrucción general que le permita formar criterio propio y fundado sobre las cualidades reales de los candidatos que debe contribuir a elegir para los cargos más elevados de la Nación.

Ni el desarrollo mental, ni la instrucción de los alumnos que a ella corresponden, permiten a la enseñanza primaria prepararlos para llenar con éxito los fines indicados: es esa una misión de la enseñanza secundaria: y es debido a tan elevados fines, a la gran trascendencia que tienen en el progreso de las naciones, en el bienestar de sus habitantes y en el mayor rendimiento de su actividad, que la enseñanza secundaria tiene tanta importancia. Esa importancia es grande para todos los países, pero lo es

en grado sumo para los republicanos; sin exagerar absolutamente, puede afirmarse que no puede haber democracia, que como tal funcione bien y responda eficazmente a sus principios y a sus finalidades, sin una amplia difusión de la enseñanza secundaria bien entendida.

Però la influencia de la enseñanza secundaria no debe limitarse solamente a formar ciudadanos: debe contribuir a desarrollar su bienestar moral y material y a llenar necesidades sociales exigidas por el progreso, que no alcanza a llenar la enseñanza primaria.

En los pueblos civilizados modernos, el organismo social se ha complicado y perfeccionado para responder a un funcionamiento más complejo y científico: los progresos de la ciencia y de la industria han modificado radicalmente muchos servicios públicos, han creado otros nuevos importantísimos, que se refieren a la conservación de la salud, a la difusión de la cultura popular y al bienestar general; y no solamente los empleados que intervienen en esos servicios deben tener la cultura general de los estudios secundarios, para llenar su misión, sino que el pueblo, a cuyo alcance está esa cultura, la necesita para mejor disfrutar de las ventajas de esos progresos, que influyen en su salud y en su bienestar.

Como estímulo para la difusión de los estudios secundarios, y como medio de mejoramiento de los servicios públicos, convendría que se dictaran leyes que obligaran a haber hecho esos estudios a los empleados de las Oficinas del Estado. Con esto no sólo aumentaría el prestigio de las oficinas públicas, sino que sus empleados darían mayor rendimiento de trabajo útil: se evitaría así el ingreso a ellas de personas ineptas para sus funciones, y sería un procedimiento fácil para que los funcionarios superiores de la Administración pública eludieran el compromiso de proponer o nombrar empleados que no sólo no son útiles, sino que perturban el trabajo de los buenos.

Los comerciantes, los industriales, los importadores y exportadores, los agentes comerciales, los comisionistas, los rematadores, en fin todas las personas que intervienen en los cambios, seguros, trasportes, etc., necesitan los conocimientos de la enseñanza secundaria para desarrollar su actividad a conciencia, para velar por sus intereses y los de sus comitentes, para consultar con la debida preparación los libros y publicaciones que interesan a su ramo, y utilizar sus informaciones: esto es tanto más necesario en los países americanos, cuanto están aún muy poco difundidas las escuelas de comercio.

El propietario y el rentista, para alternar dignamente en las clases ilustradas de la sociedad, para dirigir a conciencia su vida y sus intereses, con algún fin útil para sí mismo y para sus semejantes, necesitan también los conocimientos generales de la enseñanza secundaria: con esa instrucción gozarán más de la vida, tendrán mayores distracciones, y elevando su espíritu, tendrá mayor valor su individualidad en la masa social.

La influencia de los estudios secundarios se hace sentir sobre todo en las clases sociales intermedias entre las intelectuales dirigentes y las obreras. Esas clases intermedias, por su influencia en la distribución del capital y del trabajo y en los intercambios con los demás países, tienen una gran importancia en la acción social y marcan el nivel medio de su cultura y de su prosperidad. Es, pues, de gran conveniencia dar a la enseñanza secundaria una tendencia apropiada para que contribuya al mejor aprovechamiento de los productos y ventajas naturales de cada país, y del trabajo y capital de sus habitantes.

La influencia de la enseñanza secundaria en la cultura de la familia y de la sociedad es tan grande y de tanta trascendencia, que, solo por este concepto, se justifica la gran atención que merece de los gobiernos: la propaganda de los libros, de los periódicos y de los conferenciantes para la extirpación de las enfermedades sociales y para la difusión de la cultura científica, literaria y artística, y las leyes dictadas y medios ideados para

disminuir los dolores de la humanidad y aumentar su bienestar, no serán comprendidos, ni serán auxiliados eficazmente en la práctica, hasta tanto que la instrucción secundaria se haya difundido en las masas populares.

Resulta, pues, que, además de contribuir a la formación de los ciudadanos la enseñanza secundaria, bien entendida, influye moral y materialmente en el mejoramiento social, elevando la cultura y contribuyendo al bienestar de los pueblos.

Estas funciones de la enseñanza secundaria deben ser las primordiales, las que sobre todo deben tenerse en cuenta por los gobiernos en los planes de estudio, programas y métodos de enseñanza.

III.

Indiqué el concepto en que debe considerarse la enseñanza secundaria, en su fin de cultura general de los individuos de una nación civilizada. Paso ahora a ocuparme de otro de los fines de esa enseñanza, que es el de preparar a los estudiantes para el ingreso en los estudios universitarios o profesionales superiores.

Sobre el fin primordial de la enseñanza secundaria no parece difícil establecer un acuerdo general, por lo menos en cuanto a sus líneas generales; pero hay seguramente bastantes divergencias al apreciar la importancia y clases de estudios que deben considerarse necesarias o convenientes para el fin preparatorio de esa enseñanza.

Hasta hace pocos años los planes de estudio de casi todos los países englobaban ambas tendencias de la enseñanza secundaria, pero en tales condiciones que más que a la cultura general respondían al fin de preparación para los estudios superiores: se reconoció que tal sistema de enseñanza, más que al mejoramiento de la masa social, contribuía a formar una enorme cantidad de hombres de instrucción superior que, si bien tenían muchos conocimientos teóricos, no sabiendo aplicarlos a las necesidades de la vida, no encontraban campo para su actividad, y de hecho tales hombres venían a constituir un peso muerto para la sociedad; se reconoció que ese sistema de enseñanza descuidaba el fin esencial de los estudios por uno que debía considerarse accesorio.

Vino en consecuencia el deslinde de los campos de la enseñanza secundaria bien establecido, sea por los ciclos explícitamente establecidos como en Francia, o por el método de exposición gradual y concéntrica de los conocimientos como en Alemania, Austria, Noruega, Rusia, Suecia, Suiza, etc., en sus gimnasios, gimnasios reales y escuelas reales.

Pero, dentro de la tendencia de las divisiones de la enseñanza secundaria, en Europa, el grado superior de cultura alcanzado por sus principales países, la necesidad de remontar los estudios literarios y artísticos hasta sus fuentes en la cultura griega y latina, determinaron preparaciones especiales en los estudios secundarios, especializaciones en su tendencia, que no se justificarían en los países americanos, salvo en los Estados Unidos, quizá: los demás, antes de llegar a los refinamientos de la cultura de los países de antigua civilización, y que dirigen la actual, necesitan resolver previamente los problemas urgentes de su organización interna política y económica, y del incremento y educación de su población tan dispersa y tan heterogénea.

De acuerdo con las actividades que más necesitan estimular los países americanos, la enseñanza secundaria que más les conviene es la llamada moderna, es decir, la que tiene por base las lenguas vivas y las ciencias de aplicación: es la enseñanza de las clases C y D del plan francés, y de las escuelas reales de Alemania, Austria, Rusia, Suiza, etc.; esto no significa que cada país deba ceñirse estrictamente ni al plan francés, ni al alemán. En realidad el plan de estudios secundarios franceses es demasiado científico y recargado, aún después de las últimas modificaciones; y el alemán es quizá demasiado diluido, por lo cual excede en el número de años, a los que razonablemente debe exigirse para los estudios secundarios.

Los países americanos han reconocido muchas veces los defectos de su enseñanza secundaria, y en casi todos ellos se han proyectado o realizado reformas para encaminarla de acuerdo con sus fines, y en los parlamentos, ministros y diputados han declarado que es necesario dirigirla a su fin primordial, que es la formación de ciudadanos

aptos para la vida práctica con la instrucción requerida en toda sociedad civilizada; pero salvo en algún Estado del Brasil y en Chile, no parece haberse llegado todavía a una solución acertada, pues en los demás países la instrucción secundaria no tiene en sus primeros años el carácter práctico que le corresponde, y conduce de preferencia a los alumnos a los estudios superiores.

Pero aún aceptando esa desviación inconveniente de la enseñanza hacia un fin accesorio, el caso es que ella no se suele dar como corresponde a su mejor aprovechamiento y a la preparación "efectiva" que necesitan los alumnos para los estudios superiores.

Razones de utilidad general, de pedagogía, de higiene mental y de economía aconsejan que, previa a la enseñanza secundaria racional preparatoria para los estudios superiores, debe darse la enseñanza intuitiva y experimental que caracteriza el primer ciclo de la enseñanza moderna; los alumnos no aprovechan bien la enseñanza anticipada del segundo ciclo, que exige ser preparada por el primero, principalmente dirigido al desarrollo de las facultades de observación y a la adquisición de las nociones fundamentales de espacio, cantidad, dirección, relación, que deben adquirirse intuitivamente y no por definiciones vacías de sentido dados la edad, instrucción y desarrollo mental de los alumnos en sus primeros años de estudios secundarios.

La enseñanza secundaria debe recorrer sus dos etapas regulares, y si la primera responde a un fin de utilidad en la vida social, es impuesta también por la pedagogía como preparación para la segunda: los tiernos cerebros en formación no deben ser sometidos al trabajo excesivo de la instrucción racional, sin que previamente se fortifiquen por los ejercicios más apropiados para su normal desarrollo: el esfuerzo mental excesivo y fuera de tiempo, lejos de robustecer la inteligencia la debilita.

En la ordenación de los dos ciclos de la enseñanza secundaria, en la forma indicada, hay además un motivo de economía y de utilización práctica de esa enseñanza. No todos los alumnos que comienzan sus estudios secundarios, aun los que aspiran a los superiores, terminan su instrucción en aquellos: unos por necesidad, otros por deficiencia de dotes intelectuales y otros porque sienten otras aspiraciones, abandonan sus clases. Para estos alumnos es conveniente que haya un ciclo de la enseñanza, mediante el cual los que interrumpen sus estudios tengan interés en completar los de ese ciclo por la utilidad práctica que de ellos puedan derivar. Con una enseñanza racional, falta de la base de los estudios del primer ciclo, el alumno poco provecho puede sacar de ella en la vida práctica: tendría quizá un abundante registro de cosas abstractas en su memoria, pero muy poco sabrá aplicar de lo que haya estudiado.

Los países americanos cuyos planes, programas y métodos de enseñanza mantienen la tendencia de la enseñanza secundaria hacia la preparación para los estudios superiores, deben organizar los estudios de esa enseñanza en dos ciclos de tendencias bien definidas: el primero, de cultura general, para formar ciudadanos aptos para el ejercicio más adelantado de la democracia; y el otro, de complemento de instrucción, cuyo fin sea la preparación de los alumnos que se dirijan a los estudios superiores. Si sobre esta conclusión estuviéramos de acuerdo, sería conveniente una declaración, expresa de esta sección del Congreso.

IV.

Tiene importancia determinar qué grado de instrucción debe exigirse a los alumnos que aspiren a iniciar los estudios secundarios: es necesario fijar ideas al respecto, puesto que existe diversidad de criterio en países muy adelantados en la enseñanza. Los hay que exigen tres o cuatro años de estudios primarios para ingresar a los secundarios, y otros llegan a exigir 6, 7 y hasta ocho años de enseñanza primaria: entiendo que este máximo corresponde a los Estados Unidos, y que el mínimo es de Alemania.

¿A qué responde esa diversidad de preparación de los estudios primarios de los alumnos, para un mismo fin, en países tan adelantados en su instrucción?

La explicación está en que para juzgar de la extensión de los estudios primarios y secundarios en su escala de graduación, no hay que atenerse exclusivamente a una u

otra categoría, sobre todo si se trata de comparar planes de enseñanza de diversos países. Ejemplo, los dos indicados: los Estados Unidos tienen ocho años de estudios primarios completados por cuatro de secundarios, y Alemania dedica nueve años a la enseñanza secundaria, pero ingresan a ella alumnos con tres años de instrucción primaria. Sin embargo, tomando en conjunto las dos enseñanzas, primaria y secundaria, en ambos países, se llega a doce años de duración, que es la normal, considerando la mayoría de los países europeos.

En realidad es necesario que entre la enseñanza primaria y la secundaria haya una relación muy íntima, que ésta sea la continuación de aquella y que la complemente, teniendo muy en cuenta sus fines y las reglas pedagógicas que deben observarse para su mejor y más económico aprovechamiento. En varios países americanos se nota falta de la debida relación entre ambas enseñanzas, y este defecto es debido en gran parte a que suelen depender de autoridades técnicas distintas, que obran independientemente, sin más lazo de unión que el ministro del ramo.

En los planes y programas de estudio que obedecen al régimen antiguo, o de un ciclo único en la enseñanza secundaria, siendo éste necesariamente de estudios preparatorios, requiere en los alumnos una preparación previa, en la escuela primaria, muy superior a la que necesita en la moderna enseñanza de dos ciclos.

En efecto: debiendo ser racional la enseñanza del ciclo único de los estudios secundarios, cuya tendencia es principalmente preparatoria para los estudios superiores, y no pudiendo prescindirse de la enseñanza experimental e intuitiva, hubo que poner esta enseñanza en la escuela primaria: de ahí el mayor tiempo que exigen algunos países para los estudios primarios como previos de los secundarios.

Pero en los países que han adoptado o adopten el régimen de los dos ciclos de la enseñanza secundaria moderna, la instrucción primaria de los alumnos que a ella ingresen puede limitarse a los conocimientos fundamentales realmente necesarios: éstos a su vez dependen del plan que se adopte en la enseñanza secundaria para el desarrollo y extensión de sus estudios. En los países de enseñanza moderna parece manifestarse la tendencia a reducir la instrucción primaria en sus grados superiores, para agregarla proporcionalmente a los inferiores de la secundaria.

Existe indudablemente un mínimo de instrucción primaria del cual no debe descenderse para no desvirtuar ni complicar la secundaria: ésta no debe invadir métodos y procedimientos que son de aplicación exclusiva de la escuela primaria, cuyos maestros, locales y elementos auxiliares son los más adecuados para su enseñanza propia, y están de acuerdo con la edad, los conocimientos y el desarrollo intelectual de los niños en la edad de la primera instrucción.

La instrucción escolar primaria indispensable para iniciar los estudios secundarios no debe ser inferior a la que los alumnos pueden adquirir en cuatro o cinco años, y su plan de estudios responderá a la vez a condiciones de utilización general, de economía y de preparación indispensable para los estudios secundarios.

La instrucción de esos primeros años tiene que limitarse a los elementos fundamentales de la enseñanza primaria, que deben ser bien asimilados, pero no extendidos fuera de su dominio. Con frecuencia los maestros se apartan de esta regla, y desarrollan en los primeros grados de la enseñanza primaria conocimientos que corresponden a una instrucción de grados superiores: esta extralimitación de la enseñanza en sus principios debe evitarse, porque perjudica seriamente la preparación que realmente debe darse a los alumnos para que asimilen con facilidad y provecho los conocimientos de los grados ulteriores.

Salvo pequeñas variaciones, resultantes de condiciones especiales de cada país, en general se puede establecer que la instrucción primaria para los alumnos que deben iniciar los estudios secundarios comprenderá las siguientes materias: lectura, escritura, idioma nacional, cálculo aritmético, ejercicios físicos, dibujo, nociones de moral práctica y de instrucción cívica, los elementos de la historia y geografía del país y las primeras nociones de las ciencias y de la higiene del cuerpo.

Esta instrucción, bien aplicada, mantenida en sus justos límites, dada por buenos maestros, bien asimilada por los alumnos, los prepararía como corresponde para que iniciaran los estudios secundarios, a los cuales ingresarían a la edad de 11 ó 12 años.

Siendo esta enseñanza primaria indispensable para emprender los estudios secundarios, los alumnos que ingresen a éstos deben justificar haberla recibido regularmente, y poseerla efectivamente, mediante exámenes de ingreso.

En algunos países funcionan escuelas secundarias con clases anexas de estudios primarios: otras tienen una clase preparatoria de enseñanza primaria, de uno o dos años. Estos sistemas pueden convenir en los casos en que los alumnos de enseñanza primaria demuestren en general deficiencia en la instrucción que necesitan, o que se crea útil para economizar tiempo y reducir la enseñanza primaria a sus límites precisos.

La enseñanza secundaria en su primer ciclo—fuera de su fin utilitario—debe tener un carácter educativo apropiado a la edad y a la instrucción de los alumnos que deben recibirla: es un error pedagógico enseñar en este ciclo las matemáticas, las ciencias físicas y naturales y otros conocimientos con los textos y métodos que suelen aplicarse en algunos países americanos, porque no teniendo los alumnos la preparación necesaria para comprender esas ciencias en la forma demasiado elevada y abstracta que se les exige, las aprenden de memoria, sin comprenderlas, y fatigan con exceso su mente, sin provecho positivo: ésto explica el porqué de la prevención que la gran mayoría de los alumnos tienen a las matemáticas.

Todos los alumnos, y con mayor razón los que deban continuar sus estudios en el segundo ciclo, deben adquirir en el primero un concepto claro de las ideas de cantidad, espacio, forma, posición, dirección, relación, etc., por el estudio intuitivo y experimental de la aritmética y de la geometría; las ciencias físicas y naturales deben estudiarlas en sus elementos para explicar los fenómenos más comunes de la naturaleza, las propiedades de los cuerpos, la acción de los agentes físicos, relacionado todo con las aplicaciones a la vida práctica, despertando principalmente las facultades de observación: en este primer ciclo no debe perderse de vista, que lo esencial es adquirir un concepto claro de las cosas y de las ideas, por la observación y por la intuición, con frecuentes verificaciones experimentales, antes de dar definiciones y raciocinar sobre cosas abstractas que los alumnos no comprenden.

Es en el segundo ciclo de los estudios secundarios donde los alumnos, con un conjunto de ideas y conocimientos fundamentales bien adquiridos sobre las materias del primer ciclo, podrán, sin mayores esfuerzos, completar el desarrollo de sus facultades, mediante la aplicación del raciocinio al estudio más científico de las asignaturas ya estudiadas, y que seguramente serán mejor comprendidas en su esencia y aplicaciones.

La enseñanza secundaria, así comprendida, es mejor aprovechada y se asimila sin esfuerzo, desde luego por su gradación según la edad y el desarrollo mental de los alumnos, y después, porque lejos de fastidiarlos, les interesa, aun en sus partes abstractas, por cuanto al llegar a ellas ya han podido apreciar la importancia y las aplicaciones de los conocimientos, por los estudios del primer ciclo.

La enseñanza del segundo ciclo, tal como acabo de considerarla, más que de aplicación a la vida práctica, tiende al desarrollo de las facultades superiores del espíritu, y es la que da a los alumnos la preparación que necesitan para abordar los estudios superiores.

Los países que ya han realizado la reforma de la enseñanza secundaria, si bien están de acuerdo en los principios que deben regirla, de hecho no lo están completamente en sus planes de estudio y programas: así los planes y programas de la enseñanza secundaria moderna de Alemania y de Francia, pueden tomarse como tipos por sus diferencias.

La instrucción secundaria de Alemania es más elemental, menos científica, menos recargada en sus diferentes años que la de Francia: en este país el plan de estudio y los programas exigen de los alumnos en siete años la adquisición de más conocimientos

que en Alemania en nueve años, siendo poco diferente la preparación exigida a los alumnos de ambos países en su instrucción primaria.

Es que a pesar de las reformas hechas en la enseñanza secundaria de Francia, sus estudios son aún muy recargados, tienen superabundancia de materias y de detalles, que dan demasiada extensión a los estudios, en detrimento de la mejor asimilación de los realmente necesarios; en detrimento también de la salud de los alumnos que se empeñen en dar estricto cumplimiento a esos programas.

Para los países americanos, tomando en cuenta las necesidades de su instrucción, y sobre todo las aplicaciones prácticas de la secundaria y de la superior, conviene más el régimen de estudios alemán que el francés; pero puede y debe reducirse a siete el número de años de duración de la enseñanza en sus dos ciclos.

Coordinada como corresponde, la enseñanza secundaria con la primaria, ésta podrían empezarla los niños a los seis o siete años, hacer los estudios en cinco, pasando así a los secundarios a los once o doce años. Puede completarse el primer ciclo de la enseñanza secundaria en cuatro años, y el segundo en tres: en esta forma los alumnos terminarían los estudios del primer ciclo a los quince o diez y seis años, edad apropiada para iniciarse en las prácticas de la vida, y también para continuar los estudios en el segundo ciclo con el suficiente desarrollo mental, poco frecuente en jóvenes de edad inferior a quince años.

De los planes y programas de estudios secundarios que conozco de los países americanos, la gran mayoría no responde al concepto de la enseñanza moderna: los que más se aproximan a él son los programas de algunas escuelas del Brasil (el Instituto Julio Castilhos de Porto Alegre) y sobre todo los recientes de la enseñanza secundaria de Chile. Ambos países se han inclinado de preferencia al régimen de estudios de Alemania, adoptando planes más simplificados en sus materias y de menor duración.

Los demás países, (hablo principalmente de los sudamericanos), deben realizar con toda urgencia la reforma de su enseñanza secundaria, porque la que aplican no responde a su fin primordial: a ejemplo de lo que han hecho Estados Unidos y los países europeos convendría constituir en cada país americano comisiones de profesores que estudiaran la reforma de los planes de estudio y de los programas, y reunir después los trabajos de esas Comisiones nacionales en un Congreso pan-americano de enseñanza; en ese Congreso debería tratarse además las cuestiones referentes a la enseñanza primaria y a la superior, que también requieren importantes reformas, necesariamente relacionadas con la secundaria.

Será de gran utilidad lo mucho que se ha hecho y publicado en Europa respecto de las reformas de la enseñanza, y al respecto las memorias, discusiones y conclusiones de las Comisiones de profesores y de los últimos Congresos de enseñanza serán buenos elementos de información y trabajo adelantado en muchas de las cuestiones debatidas; pero, como las necesidades y recursos de los países americanos no son los mismos que en los europeos, es preciso estudiar planes y programas de enseñanza apropiados para nuestros respectivos países, de acuerdo con sus necesidades y condiciones particulares.

VI.

¿En qué extensión deberían determinarse los cursos de la enseñanza secundaria?

Las materias de enseñanza de los estudios secundarios y la extensión de las mismas deben adaptarse a las condiciones de cada país; pero adoptado el régimen de los dos ciclos de la enseñanza secundaria moderna, atendiendo a los fines de la misma, ella debe subordinarse a un plan completo, unitario, de estudios graduados que empiecen en las nociones elementales de los conocimientos que ese plan debe comprender, y termine con el suficiente desarrollo de ellos, de modo tal, que adquiridos por los alumnos sepan, al terminar el primer ciclo, aplicarlos a las necesidades de la vida práctica, y terminando el segundo tengan la preparación intelectual requerida para abordar los estudios superiores.

Este principio establece el concepto de la enseñanza secundaria moderna, y fija un límite inferior y un límite superior para la extensión que debe dársele. El límite

inferior es el que determina las condiciones de ingreso, en cuanto al mínimo de conocimientos que debe exigirse de los alumnos en sus estudios primarios; ya he indicado el mínimo de esos conocimientos. El límite superior es el que determina el conjunto de los estudios que deben alcanzar los alumnos para ingresar a los estudios superiores: no hay criterio uniforme en la apreciación de este límite superior de los estudios secundarios, ni aún en los países que han reformado la enseñanza de acuerdo con su concepto moderno: y una de las causas de esa divergencia se deriva de los planes y programas de la enseñanza superior. Así en Francia se exige más estudios que en Alemania para emprender los superiores, y es sobre todo en los estudios matemáticos en que la exigencia es mayor en aquel país: la tendencia moderna, la que realmente conviene a los países de América, es reducir a lo necesario los estudios secundarios, manteniéndolos en su carácter de tales, de disciplina mental previa a los estudios superiores. En el primer ciclo, enseñanza práctica, intuitiva, de cultura general como para todos los alumnos, continúen o no estudiando después del primer ciclo, y cualquiera que sea la dirección ulterior de sus estudios futuros: en el segundo ciclo los cursos deben ser de revisión, de ampliación y de generalización con tendencia a una especialización según sea la escuela superior o facultad a que se dirija el alumno.

El plan siguiente responde a las necesidades que deben satisfacer los estudios secundarios en la mayoría de los países de Sud América, y con pocas variantes lo considero aplicable a los demás de Sud y Centro América.

PRIMER CICLO.

Primer año.

	Horas semanales.		Horas semanales.
Idioma nacional.....	6	Geografía.....	4
Matemáticas.....	6	Dibujo.....	2
Francés.....	2	Moral práctica e instrucción cívica.....	2
Historia natural.....	3	Ejercicios físicos.....	—

Segundo año.

Idioma nacional.....	6	Historia.....	2
Matemáticas.....	6	Dibujo.....	2
Francés.....	2	Moral práctica e instrucción cívica.....	2
Historia natural.....	3	Física y química.....	3
Geografía.....	2	Ejercicios físicos.....	—

Tercer año.

Idioma nacional.....	3	Historia.....	2
Matemáticas.....	4	Moral práctica e instrucción cívica.....	2
Francés.....	2	Física y química.....	4
Historia natural.....	3	Dibujo.....	2
Geografía.....	2	Ejercicios físicos.....	—

Cuarto año.

Idioma nacional.....	2	Instrucción cívica.....	1
Matemáticas.....	3	Dibujo.....	2
Francés.....	2	Física y química.....	4
Fisiología e higiene.....	2	Filosofía.....	3
Geografía.....	2	Ejercicios físicos.....	—
Historia.....	2		

Esta enseñanza debe ser principalmente intuitiva, con muchos ejercicios de aplicación corriente a los usos de la vida y relacionando los conocimientos diversos entre sí, con prácticas sobre el terreno y de laboratorio, etc.

Considero un error pedagógico acumular muchos conocimientos de una misma asignatura en un año como ocurre frecuentemente en varios planes de estudios de Sud-América con la aritmética, el álgebra, la geometría, la física, la química, la his-

toria natural, la geografía, etc. La compenetración de estas materias y las ventajas pedagógicas de los ejercicios de aplicación de unas para auxiliar el estudio de las demás, y relacionarlas, como están relacionadas en la realidad de la vida, exigen mayor división de la enseñanza en el tiempo de que se dispone para desarrollarla.

Además, no conviene interrumpir por uno o dos años el estudio de materias del primer ciclo que deben ser continuadas o aplicadas en el segundo ciclo.

Considero también inconveniente exigir como obligatorio más de un idioma extranjero en el primer ciclo: para los países sud y centro americanos el idioma extranjero más indicado es el francés, por ser el más afín al nacional y por lo tanto el más fácil de aprender: es preferible que los alumnos estudien bien un idioma extranjero, que no dos mal: el idioma inglés debe ser de estudio facultativo en el primer ciclo por su gran importancia comercial y obligatorio en todo el segundo.

En cuanto al segundo ciclo podrían desarrollarse los estudios en tres años, de acuerdo con el siguiente plan: comprende tres años, dos de estudio común preparatorio general, para todos los alumnos que aspiran a los estudios superiores, y un tercero de especialización para las diversas facultades o escuelas superiores.

PREPARATORIOS GENERALES.

Primer año.

	Horas.		Horas.
Literatura.....	3	Filosofía.....	3
Matemáticas.....	4	Instrucción cívica y elementos de	
Inglés o alemán.....	4	derecho.....	3
Taquigrafía.....	2	Dibujo.....	2
Historia.....	3	Ejercicios físicos.....	—

Segundo año.

Literatura.....	3	Instrucción cívica y elementos de	
Matemáticas.....	4	derecho.....	3
Inglés o alemán.....	4	Dibujo.....	2
Historia.....	3	Taquigrafía.....	2
Filosofía.....	3	Ejercicios físicos.....	—

PREPARATORIOS ESPECIALES.

Tercer año.

Para los aspirantes a la Facultad de Ciencias Físico-Matemáticas o escuelas de ingeniería:	Horas.	Para los aspirantes a la Facultad de Medicina o de Ciencias naturales:	Horas.
Literatura.....	6	Matemáticas.....	6
Inglés o alemán.....	4	Inglés o alemán.....	4
Historia.....	6	Mecánica.....	3
Filosofía.....	6	Física.....	4
Taquigrafía.....	2	Química.....	4
Ejercicios físicos.....	—	Coasmografía.....	3
		Taquigrafía.....	2
		Ejercicios físicos.....	—
Para aspirantes a la Facultad de Derecho o de Filosofía y Letras:			
Matemáticas.....	3		
Inglés o alemán.....	4		
Historia natural.....	6		
Física.....	4		
Química.....	4		
Filosofía.....	3		
Taquigrafía.....	2		
Ejercicios físicos.....	—		

Este plan desarrollando convenientemente la enseñanza, con programas bien estudiados y aplicados con buenos métodos, comprende una instrucción integral apropiada y suficientemente especializada para los alumnos que se dirigen a los estudios superiores: tiene analogía con el plan de enseñanza secundaria sección D (ciencias) que rige en Francia, sin llegar a su extensión, en la parte de ciencias especialmente, ni exigir la fuerte especialización del año suplementario del bachillerato francés dedicado a "filosofía" o a "matemáticas."

La especialización del año final que indico para el segundo ciclo, debe tener por objetivo una revisión de los conocimientos adquiridos en los años precedentes, ampliando en cada asignatura los puntos de mayor importancia para los estudios ulteriores, y correlacionando las diferentes materias en un concepto general sintético: las lecciones deberán auxiliarse con composiciones análisis y juicios históricos, literarios y filosóficos, con observaciones, uso de aparatos, trabajos de laboratorio, excursiones, ejercicios numéricos y gráficos, uso de aparatos de medida, según la especialidad de las asignaturas.

Debe darse gran importancia al año final del segundo ciclo, porque complementa la instrucción literaria filosófica y científica de cultura intelectual con ejercicios que la fortifican: es con esa instrucción así entendida que tendrán los alumnos una preparación real y positiva tal como la necesitan para emprender sus estudios superiores.

VII.

La extensión y aún las materias de enseñanza de los estudios secundarios deben adaptarse a las condiciones y necesidades de cada país, y en cada uno puede convenir variar la enseñanza por circunstancias de localidad o determinadas por la economía nacional.

Como principio general puede establecerse que en los grandes centros urbanos, donde se concentra principalmente la vida de un país, o en los centros importantes de población, industrial o comercial, la enseñanza secundaria poco puede variar en sus fundamentos y en su organización y desarrollo.

En esos grandes centros, focos de irradiación en el progreso general de la nación, existen generalmente las facultades universitarias, los institutos científicos y literarios y las escuelas profesionales superiores, establecimientos que por sí solos determinaran el funcionamiento, la extensión y las orientaciones diversas de la enseñanza secundaria: en esos centros importantes de población podrán no todas las escuelas secundarias dar la enseñanza de los dos ciclos; pero deberá funcionar una o más, con la enseñanza completa de ambos: como variante, aplicable en determinados casos, podrá admitirse la enseñanza del segundo ciclo en clases anexas como preparatorias de las facultades o de las escuelas profesionales superiores.

En regiones donde tengan asiento las industrias ganaderas, o que posean riquezas naturales cuya explotación, por las ventajas económicas que pueda ofrecer, tenga el Gobierno interés en estimular, convendrá organizar la enseñanza secundaria en condiciones de que responda en su tendencia a las necesidades locales, en cuanto a su cultura general, y en cuanto al fomento de sus industrias y a la explotación más conveniente de sus riquezas.

Pero conviene establecer—como principio general—que en el primer ciclo, la enseñanza secundaria siempre debe responder a su fin primordial, de preparar ciudadanos para la vida práctica y para el ejercicio consciente de la democracia: debe por lo tanto ser uniforme para todos los países americanos, o regiones de un mismo país, o apartarse muy poco de su concepto propio, que es fundamental para el primer ciclo.

En cuanto a la enseñanza del segundo ciclo, sería inconveniente, y poco práctico, desarrollarla en las regiones ganaderas, agrícolas, mineras o de grandes industrias, como en los importantes centros de población urbana a que antes me he referido: en esas regiones, la enseñanza del segundo ciclo debe ser sustituida por una instrucción que prepare hombres capaces para intervenir activa y conscientemente en el progreso de las industrias de la región, en su mejor y más económico rendimiento.

Las naciones tienen gran interés en explotar sus riquezas naturales en desarrollar sus industrias con elementos propios, y en dar vida productiva a cada región, porque así se reparte mejor el trabajo y el capital, se intensifica la producción, se distribuye mejor y se arraiga la población a la localidad.

Debe evitarse, en lo posible, el abandono de la tierra por los hombres de trabajo, y los graves inconvenientes de su concentración en las ciudades, donde la vida artificial y difícil gasta la salud y las energías morales y crea perturbaciones en el orden social. La enseñanza secundaria regional, en su segundo ciclo, siendo apropiado al fin que he indicado, puede contribuir a los progresos locales de cada país fuera de los grandes centros de cultura: en vez de tener tendencia de preparación literaria o científica para estudios superiores, podrá ser de carácter técnico o profesional elemental, o preparatorio, con tendencia a ese carácter especializado, si hubiere escuelas especiales para esos estudios.

La escasa densidad de población de la mayor parte de los países americanos, la necesidad en que se encuentran de desarrollar una instrucción práctica y de aplicación al fomento de su población, y al abaratamiento de los artículos de primera necesidad, la imposibilidad de que puedan multiplicar suficientemente sus escuelas comerciales, profesionales, agrícolas e industriales, hacen muy conveniente del punto de vista de la economía nacional, el crear una instrucción secundaria regional, que llene en lo necesario la misión de esas escuelas especiales.

Prácticamente, considero que sería posible dar, con provechosos resultados, esa tendencia a la enseñanza secundaria regional de los países americanos; éstos necesitan, en primer término, educar su población rural para los trabajos de explotación de la tierra.

Los intereses locales de las poblaciones rurales aconsejan dar esa tendencia práctica a la enseñanza secundaria regional: los países americanos, necesitan en primer término educar su población rural, poniéndola en condiciones de aplicar los conocimientos elementales de las ciencias para la explotación económica bien entendida de las industrias rurales, evitando, en lo posible, los frecuentes perjuicios que causan los agentes naturales y las enfermedades a esas industrias: una cultura general al respecto, difundida por la enseñanza secundaria regional en el segundo ciclo de sus estudios, contribuiría mucho a mejorar la explotación de las industrias que constituyen la fuente principal de producción de los países americanos.

ENSEÑANZA MÉDICA.

Por TEODORO MUHM,

Profesor de la Universidad de Chile, Santiago de Chile.

Las cuestiones concernientes a la enseñanza médica que serán tratadas en este informe, y que deberán someterse a la consideración del Congreso Científico Panamericano de Washington, se refieren al grado de preparación previa que debe exigirse para la admisión de alumnos en las escuelas médicas, al mínimo de requisitos exigidos para conferir el título de médico, y por fin, a las cátedras que deben ser servidas por profesores dedicados exclusivamente a la enseñanza y a la investigación científica.

Estas cuestiones serán tratadas en líneas generales, sin entrar en detalles de reglamentación, y tomando como punto de partida las bases establecidas en la enseñanza que proporciona la Universidad de Chile.

Comenzaremos por el grado de preparación que deben tener los alumnos que se incorporan en una escuela médica.

En Chile rigen a este respecto las disposiciones de la ley de 9 de enero de 1879. Según ellas es indispensable poseer el título de bachiller en filosofía y humanidades para inscribirse como alumno en los cursos de leyes o de medicina, y el de bachiller en matemáticas para el curso de ingeniería.

Para pretender el grado de bachiller en filosofía y humanidades se requiere haber rendido los exámenes correspondientes al plan de estudios secundarios. La prueba misma para obtener el título versa sobre un ramo indicado en una cédula sorteada por el alumno con seis días de anticipación. Entre las cédulas de sorteo para este bachillerato no figura ninguna que contenga temas sobre matemáticas o ciencias naturales.

La prueba para el bachillerato en ciencias físicas y matemáticas consiste en un examen general de todos los ramos de matemáticas de instrucción secundaria.

Se deduce de lo expuesto que el alumno que se incorpora al curso de matemáticas de la Universidad, tiene una preparación adecuada al estudio en que va a iniciarse.

Si bien sus estudios secundarios no difieren en nada de los que ha seguido un bachiller en filosofía y humanidades, se le obliga en cambio a rendir un examen especial de matemáticas, lo cual significa una preparación más esmerada en los ramos correspondientes.

No sucede lo mismo con los alumnos que han de incorporarse al curso de medicina. No poseen ninguna preparación especial, y empiezan sus estudios médicos con los mismos conocimientos que tiene un alumno del curso de leyes. Como entre las cédulas de sorteo para el bachillerato en humanidades no figuran las ciencias físicas y naturales, serán justamente estos ramos, los más importantes para el estudiante de medicina, los que menos preparación reciben; y el alumno se incorpora al curso de medicina con conocimientos insuficientes.

Este defecto de nuestro plan de enseñanza debe desaparecer, para satisfacer la aspiración general de incorporar en los cursos superiores alumnos debidamente preparados.

Para conseguir este objeto con respecto a los cursos de medicina, conviene establecer un bachillerato especial, que podría denominarse de ciencias físicas y naturales, título que sería indispensable poseer para incorporarse al curso indicado.

Para obtener el título de bachiller en ciencias físicas y naturales, el alumno deberá comprobar que reúne las condiciones requeridas para aspirar al bachillerato en filosofía y humanidades, y deberá someterse a un examen que comprenda no sólo los ramos de física elemental, química general e historia natural, sino también los elementos de matemáticas indispensables para el estudio de las ciencias médicas. La insuficiencia de preparación en geometría, álgebra y trigonometría es una falta que se hace sentir penosamente en los cursos de física y fisiología, y que impone al profesor y al alumno trabajo excesivo y pérdida de tiempo.

La segunda cuestión propuesta se refiere al minimum de requisitos que deben exigirse para conferir el título de médico-cirujano, y está relacionada directamente con la enseñanza médica y la conveniencia de su reglamentación.

Creemos a este respecto que el alumno debe disponer de libertad completa para desarrollar sus estudios en la forma y tiempo que él elija. La libertad académica, tal como se practica en las universidades alemanas, tiene según nuestra opinión ventajas muy considerables sobre una reglamentación estricta que se extiende a la duración de los estudios o a la asistencia obligatoria a las clases. El interés inherente a las ciencias médicas estimula al estudio y despierta el espíritu de observación; pero es a menudo contraproducente imponer obligaciones reglamentadas, que siempre tienen algo de odiosas, e inducen fácilmente a quebrantarlas.

A las universidades no les corresponde el papel de educar la disciplina, sino el de proporcionar los conocimientos indispensables para el ejercicio de una profesión, o dar oportunidad para perfeccionar conocimientos ya adquiridos; el papel educador corresponde a las escuelas y liceos.

De acuerdo con esta idea fundamental, no debe hacerse una distribución de las asignaturas por años o semestres, sino dejar al alumno en libertad para distribuir sus

estudios en la forma que crea conveniente. A lo sumo convendría que la facultad de medicina recomendara un plan de estudios determinado, pero sin imponer al alumno la obligación de ceñirse estrictamente a este plan. Así el estudiante de medicina dispondría de un modelo sobre el orden que más le conviene seguir en el estudio de las diversas asignaturas; pero tendría al mismo tiempo ocasión para dar más desarrollo a ciertos ramos, y profundizarlos, según sean sus inclinaciones. El peligro de que los alumnos pudieran así especializarse antes de tiempo en un ramo, con descuido de otros, no existe si se considera que el aspirante al título de médico deberá acreditar en una prueba final que posee los conocimientos generales indispensables para el correcto ejercicio profesional.

Para que los estudios médicos se hagan con la seriedad debida, es esencial proceder a la supresión de los exámenes anuales, en la forma en que éstos se practican en muchas universidades, y como actualmente están en uso entre nosotros. El sistema de los exámenes anuales favorece una preparación superficial e insuficiente, por cuanto el alumno descuida un estudio concienzudo y sólo se preocupa de adquirir a última hora la preparación necesaria para rendir el examen correspondiente. El resultado es generalmente deplorable, porque los conocimientos adquiridos a la ligera, no son asimilados y se olvidan en corto tiempo.

Por otra parte no puede negarse la utilidad manifiesta de los exámenes para cerciorarse que el alumno ha adquirido un mínimum indispensable de conocimientos para la prosecución de sus estudios o para obtener el título profesional. Conviene por esta razón que el examen sobre los ramos estudiados se efectúe, no al fin de cada curso, sino en la forma de una prueba general para la adquisición de grados, que lo habiliten para la continuación de sus estudios.

En conformidad con estas ideas se podría establecer que todo alumno que posea los comprobantes de haber seguido los cursos de química, física, zoología, botánica, anatomía, histología y fisiología, y ejecutado los trabajos prácticos reglamentarios, será aceptado a un examen que deberá rendirse seguidamente dentro de un plazo fijo de pocos días, y que versará sobre temas de cada una de las asignaturas mencionadas. Sólo después de obtener la aprobación en esta prueba, el alumno será admitido a la inscripción en las asignaturas correspondientes a los cursos superiores.

Se podría establecer además que, terminados los estudios médicos, el alumno se someterá a una segunda prueba que comprenderá la patología, medicina operatoria, anatomía patológica, higiene y bacteriología y farmacología. La aprobación en esta segunda prueba lo habilitaría para presentarse a un tercer examen esencialmente práctico, que se rendirá inmediatamente después, y corresponderá a las clínicas generales y especiales.

Este sistema de exámenes, bosquejado sólo en sus líneas generales, comprende todas las asignaturas, y garantiza a nuestro juicio la adquisición de aquellos conocimientos generales más necesarios para la práctica profesional. Evita en lo posible toda preparación superficial, ya que el alumno se verá obligado a un estudio continuo y razonado, y no podrá preparar a última hora una serie de exámenes sobre ramos que ha cursado con mucha anterioridad.

El estudio obligatorio de las especialidades debe imponerse como una necesidad. El profesional que trabaja en los grandes centros de población, no sentirá tanto su falta de preparación, desde que en cualquier momento puede recurrir a los especialistas; pero en las pequeñas ciudades o en los campos se verá con frecuencia obligado a intervenir en casos en que su falta de conocimientos especiales puede significar un grave peligro para el enfermo. Debe establecerse que es obligación de todo médico práctico poseer conocimientos suficientes de cada especialidad, para diagnosticar y curar las enfermedades más frecuentes, o en todo caso, para poder apreciar el momento oportuno en que el enfermo debe solicitar el cuidado de un especialista.

Para asegurar esta preparación no basta que el alumno asista a las clínicas especiales; será preciso que se someta a una prueba en que compruebe prácticamente que sabe

manejar los instrumentos de diagnóstico propios a cada especialidad, y conoce el tratamiento de las afecciones más comunes.

Estos exámenes especiales se rendirán a continuación de los correspondientes a las clínicas generales.

En la categoría de las especialidades debe colocarse también la medicina legal.

El médico-legista encargado de tantas funciones de importancia, debe tener competencia especial para su desempeño profesional. Por este motivo será preciso establecer requisitos especiales para otorgar el título de médico-legista.

En el sistema de pruebas propuesto en este informe, no está incluido el ramo de medicina legal. Basta que en la prueba final que deberá preceder al año práctico, el alumno presente los comprobantes de haber hecho un curso completo de este ramo.

En cambio el médico-legista tendrá que graduarse como tal, después de haber obtenido su título de médico-cirujano, mediante un examen especial, teórico y práctico, que acredite su competencia.

Terminados los estudios médicos y obtenida la aprobación en la prueba final de las clínicas generales y especiales, el alumno no dispone en general de la experiencia práctica necesaria para el correcto ejercicio profesional. Para subsanar esta falta conviene exigir, a semejanza de las universidades alemanas, un año práctico durante el cual el alumno se dedicará por entero a la práctica de hospital bajo la dirección de profesionales experimentados.

El año de práctica excluye cualquiera otra ocupación, y deberá durar 12 meses seguidos divididos por iguales partes entre cirugía y medicina interna.

Sólo después de cumplido este requisito el alumno podrá ser admitido a la prueba final para adquirir el título de médico-cirujano.

Conviene que a esta prueba el candidato presente un trabajo original sobre cualquier ramo de las ciencias médicas, patrocinado por el profesor en cuyo laboratorio o en cuya clínica se haya llevado a cabo. Esta última condición tiene por objeto asegurar la seriedad del trabajo y su originalidad. Aun cuando en la mayoría de los casos estas tesis escritas no registran sino hechos ya conocidos, habrá sin embargo algunas de ellas que se refieran a observaciones clínicas interesantes o a trabajos originales de investigación; no conviene, por lo tanto, suprimirlas.

El último punto de que debe ocuparse este informe se refiere a las cátedras que deben ser servidas por profesores exclusivamente dedicados a la enseñanza.

En primer lugar es preciso establecer que hay algunas cátedras, como química, física, zoología y botánica, que no necesitan estar en manos de médicos titulados; por el contrario hay conveniencia en entregarlas a profesionales especialistas. Como la práctica en estos ramos se confunde con el trabajo de laboratorio, no hay ninguna razón para impedir la práctica profesional a los catedráticos correspondientes.

No sucede lo mismo con las cátedras de anatomía, histología, fisiología, bacteriología, patología general y anatomía patológica y farmacología. Son estos, en efecto, ramos fundamentales, cuyos profesores deben ser médicos y deben estar alejados en absoluto del ejercicio profesional. Es inaceptable, por ejemplo, que los profesores de ramos tan importantes como anatomía patológica o fisiología, dividan su tiempo entre el laboratorio y la práctica médica. Son campos de trabajo tan diversos y tan ajenos uno de otro que la dedicación a ambos redundará forzosamente en perjuicio de uno de ellos, y generalmente será la enseñanza la que resultará perjudicada.

Entre las muchas razones que podrían hacerse valer para prohibir el ejercicio profesional a los profesores mencionados, hay una que conviene hacer notar especialmente. Es sabido que en las facultades latinoamericanas, con muy raras excepciones, no existe labor científica original, o no se contribuye sino en grado muy escaso al progreso científico. Y esto es debido principalmente a la escasa remuneración de los profesores de ramos científicos, que se ven obligados, por las exigencias de la vida, a dedicar a la práctica médica una parte de su tiempo, que de otro modo estaría dedicado por entero al trabajo de laboratorio.

Adjournment.

GENERAL SESSION OF SECTION IV.

NEW WILLARD HOTEL,
Thursday morning, January 6, 1916.

Chairman, ERNESTO NELSON.

The session was called to order at 10 o'clock by the chairman.

The following papers, largely Pan American topics, were presented in abstract or by title at this session:

What remains to be done for education, by Luis A. Baralt.

To what extent should elementary education be supported by local taxation and to what extent by State taxation? What should be the determining factors in the distribution of support? by Miss Jeanne Puch and Miss Marguerite Galharret.

Things which interest students in the United States, as compared with the interest of similar students in Europe and Latin America. Papers by Harry E. Bard and John D. Fitz-Gerald.

Purposes of high school education, by A. M. Zúñiga.

Should universities and colleges supported by public funds be controlled by independent and autonomous powers, or should they be controlled directly by central State authority? by R. Cañedo C.

To what extent is coeducation desirable in elementary schools, high schools, colleges, and universities? Papers by Francisco A. Rísquez, Emilio Jacobs, and Francisco Buitrago Díaz.

To what extent is an exchange of students and professors between American Republics desirable? What is the most effective basis for a system of exchange? What plans should be adopted in order to secure mutual recognition of technical and professional degrees by American Republics? Papers by Reynaldo Porchat and Domingo Amunátegui Solar.

Plans for securing a mutual recognition of technical and professional degrees granted by institutions of the first rank in the several American Republics. Papers by Rómulo E. Durón and Augustus S. Downing.

WHAT REMAINS TO BE DONE FOR EDUCATION.

By LUIS A. BARALT,

Professor, Institute of Habana, Habana, Cuba.

Wanted: A thoroughgoing reform in Pan American education.

"I hope we have reformed that indifferently with us."

"Oh, reform it altogether."—*Shakespeare.*

Much has been done in education, but it is little if compared with what remains to be done. In fact, there is almost everything to do in some of the most fundamental parts of pedagogics.

Our errors and deficiencies come principally from this one source: We lack a clear vision of what education and man are. Education, with us and in the world, needs a philosophical basis and a spiritual coronation. Alfred Fouillée was right when he said: "La seule pédagogie est la philosophie."

Radical reforms ought to be introduced as regards the end, the ideal, the spirit, the curriculum, the methods, and the extent of education.

We commit the great blunder of discussing the means before considering the ends, and forget that the ultimate end is the formation of the moral personality, since moral perfection alone is human perfection—the highest aim of education. If this is the end, the ideal must be the perfect man, the archetype that is to serve as a model, and our first question is, What is this perfect man as far as we can conceive him? My answer is, The harmonious man, for he implies and includes the free man and the intelligent, aesthetic, benevolent, and loving man. If the chief task of educators is to make men, should we not come to an agreement as to what kind of men we wish to make? This is the most fundamental question in pedagogics and the most neglected.

The spirit of our education, better, probably, in this great country than in any other, with the possible exception of Switzerland, is not yet what it should be. It generally lacks fervor, solidarity, consecration, and spirituality. You know that the spirit in any work is the feeling and tendency with which it is done. Our teachers and scholars would have the proper spirit of joy and enthusiasm if they both realized the sublime import of their sacred work and considered education as the conscious and voluntary evolution of mankind and the teacher as its greatest factor. But we seldom bear this in mind, and so the spirit of our teaching, with a few honorable exceptions, is worldly, materialistic, narrow, low, selfish—in one word, too utilitarian. It ought to have more cosmopolitanism, more cheerfulness, and more of that feeling of consecrated service of God and man without which nothing great can be done. Briefly stated, we have not enough of the spirit of unity, which is but another name for the true Christian spirit. That is the reason why the majority of teachers are found wanting in two of their most indispensable qualifications—the apostolic or missionary spirit and the enthusiasm that goes with it. They also require a vaster knowledge and a much deeper general culture. Professional training, indispensable for every teacher, is not sufficient.

The relations between teachers, scholars, families, and society are not properly attended to. No one can doubt the influence of the *milieu*. A great means, probably the most efficacious, toward the desired improvement of education is, in my opinion, the celebration of frequent professorial meetings, where the important pedagogical questions might be studied and discussed, chiefly that of the correlation of studies. We would thus avoid the repetitions, inconsistencies, and contradictions from which our teaching now suffers, and secure that oneness which is so rare and so fruitful in education. Our programs of study should be shortened in one way and enlarged in another. Much old stuff, lacking educative value, is to be mercilessly cut out, and some new matter added. How much better it is to teach a little well than a great deal superficially. All teaching should penetrate deeply and be thoroughly digested and assimilated. Our chief stress should be laid on such matters as are conducive to the formation of the noble citizen of a modern democracy. Who can deny that the formation of character is the chief concern of education? If character is what relates to the feelings and the will, it is clear that these neglected faculties ought to be preferably cultivated. This is what I call harmonious culture. Among the studies we most need none is so important as that of the intellectual and spiritual evolution of society and mankind. We have yet a good deal to learn from Europe, but let us not forget that our most imperative duty is to preserve, perfect,

and diffuse—by love and kindness, not by force, let it be understood—our own American spirit, not because it is ours, but because it is the spirit of peace, justice, liberty, and human brotherhood, which we so much admire in our Pan American Union and in the Carnegie endowment.

Our educational systems do not give aesthetic culture the attention it deserves. Among the means for imparting this necessary kind of culture, an integral part of harmonious culture, are: (1) The creation of chairs of aesthetics and aesthetic physical culture, (2) explained exhibitions of works of art, (3) explained auditions of good music, (4) explained readings of literary masterpieces in prose and in verse, and (5) the careful cultivation in the young of that precious and yet neglected faculty called the imagination. This training is especially wanted in the kindergarten, a department which, admirable as it is, stands in need of thorough reform in more than one respect. It is to be enlightened, modernized, and adapted to our present needs. Darwin's candid confession and admirable advice prove the justice of this claim. The relations between ethics and aesthetics are closer than we imagine. A man without aesthetic physical culture is a poor picture of himself and an ineffective instrument in the hands of the spirit. Are they not legion among us? We are deficient in grace and refinement.

Pure physical culture is also necessary; but I have no doubt that intercollegiate athletics ought to be radically modified, if not abolished. As we have it now, it is injurious to the interests of true education, and it degrades both gymnastics and education. As a part of a university, it should be an institution for the benefit and uplifting of all the students and teachers, not for commercial and advertising purposes, the cheap glory of a few and the low pleasure of the grand stand. Among other dangers it has that of creating the feeling, sometimes expressed by some students, that they must not allow their studies to interfere with their athletic attainments.

I should like to see this congress recommend the teaching of phonetics and orthophony in all the primary and secondary schools. A little reflection suffices to make any intelligent person see the importance of elementary phonetics, which is nothing but the analytic, and therefore scientific, study of articulate sounds. As far as I know it has not yet been introduced in the American system of education. I had the good fortune of being allowed to introduce it 16 years ago in the teaching of the English language at the Havana Institute, where it has given the most satisfactory results. Phonetics, including orthophony, should be taught in foreign language instruction and in that of the mother tongue. It is a patriotic duty to preserve the purity of our language. We stand in great need of correcting the defects of our pronunciation, and a little orthophony would do it for us. I am ready to grant that the English-speaking portion of our continent needs it less, but not that it does not need it.

Oratory should also be taught in secondary schools. The ability to express one's self is one of the most important and most neglected things in education. Besides the branch he has in charge, every teacher should incidentally teach conduct, manners, diction, and caligraphy, and also how to teach. Every class should be a normal class, and the study of expression is the best way of learning how to teach.

Pan Americanism implies, and therefore imposes the study of at least the two principal languages of our Americas, and the excuse for this preference is only this fact: That they are by far the most extended, and that the great majority of the French and Portuguese speaking persons understand English or Spanish. If this is so, let me tell you that the study of phonetics immensely facilitates the acquisition of a foreign language and makes unnecessary the residence in the foreign country. You have all often heard persons excuse themselves for their inability to speak or understand a foreign language by asserting that they have only studied it at college. Is this not a terrible reflection on the methods employed in such colleges? There is much to do in order to improve our methods in modern-language instruction and to keep our

own from corruption, provincialism, and deterioration. To love one another and to have commercial relations, Latin America must learn English and Saxon America Spanish.

Another important reform that might come out of the professional discussions here recommended is that referring to the yearly elimination of such students as show themselves incapable of pursuing with success the difficult studies of the secondary and the superior education. The example given us by Germany deserves imitation. It may seem cruel, but, if it is, "we must be cruel only to be kind," for these unfortunate students may do well in other schools, such as those for music, arts and trades, commerce, agriculture, etc. It is of much importance to society to find out the especial capacity, the true bent of every one of its members. The secondary instruction and the superior are not for all, but for an intellectual élite. For all others a superior primary education, if complete, properly oriented and combined with the necessary vocational training and civic instruction would be sufficient. This means that the State is morally bound to give each one of its citizens what he needs to be a man in the true sense of this word, and the opportunity of doing what his individual capacity permits him to do. Sad loss of time and money, much disappointment and misery would be avoided if we gave this delicate question the attention it deserves.

Our present methods, thanks to the light given us by the great modern reformers, Kant, Pestalozzi, Froebel, Herbart, Rosmini, Horace Mann, Thomas Davidson, Stanley Hall, Dr. Maria Montessori, and others, have improved greatly in the last 20 years, but, with rare exceptions, they are yet antiquated, verbalistic, rutinary, and not sufficiently explanatory and stimulating. The first duty of the teacher is to show whatever is apt to arouse the desirable feelings, awakening thereby the self-activity of the pupil. This done, he is to explain clearly, and then to make the scholar do, as the best means of learning. In the two reports I presented in 1906, after my pedagogical mission to Europe, I emphasized the necessity of so changing our education that the greater importance be given to culture and not to knowledge.

Better not to learn at all than to learn anything without understanding. To permit a student to commit to memory and recite what he has not understood is the surest way of killing his intelligence and of accustoming him to get along in school and in life without thinking. It is the effort to think and the intellectual act of understanding that strengthens the mind. A few years ago I read at the Musée Carnavalet of Paris these suggestive words of Alexandre Dumas:

"How is it that, children being so intelligent, men are so stupid? I wonder if it is the effect of education." What an awful responsibility, and how careful we should be that our teaching, intended to strengthen, at least, does not weaken the faculties of our scholars.

It seems unnecessary to speak of this, but it is, on the contrary, a subject of the greatest moment. A long experience has shown me that few teachers insist on having what they try to teach understood by the class. We must be careful that to the forms of language the forms of thought always correspond in the student's mind. Even a child can comprehend more than we generally think if we explain clearly and adapt the explanation to his age. That is a great point in education—the natural order in which the faculties appear, grow, and unfold themselves in the child, and the correlation of the means by which we may expect to help their development. It must be acknowledged that we do not pay to it anything like due attention.

As Rosmini says, "It is evident that if one thought supplies the matter for another thought, this second thought can not possibly arise until after the first has arisen and applied the matter which it requires." How absurd, then, to try to teach something that requires a maturer development or a previous knowledge. The teacher should speak, not only to the intellect, but also, and principally, to the imagination, the aesthetic faculty, the feelings and the will of the boy or girl. To make any part of man go as far as it can, we must move the whole human being. Harmonious

culture is based on this psychological fact. The excessive specialization which infects our teaching is an educational and a public calamity. Each instructor, shut up in his own branch, pulls his own way, and the result is chaos. They forget that all studies and disciplines should be unified, since their ultimate end is the formation of the free and moral personality. For this common purpose the indispensable thing, and, therefore, the chief task of the educator, is the building of a coherent, consistent, and harmonious world in the minds of his pupils, a true world rich in motives for noble deeds—an idea and an endeavor unfortunately conspicuous for their absence in the large majority of teachers. Kant has proved that the understanding creates the world; but not the understanding alone, but the whole intellect with the cooperation of the feelings and the will. If this is so, then the most important problem in pedagogics is how to find the means by which we can awaken the desirable desires and so change the feelings that they, in their turn, may modify the will and enable the whole mind to construct this new and truer world favorable to the interests of the spirit and, therefore, to those of every true education. This world vision is what in German is called *Weitanschauung*.

We talk a great deal about the necessity of following nature and giving a practical education. This is right if by the word "nature" we do not mean the nature of the irrational, and, consequently, irresponsible animal, but human nature, which is quite another thing. Education is the ascension from our primitive nature to the ideal. This is what Rosenkranz called the principle of *Selbstentfremdung* (self-estrangement). A man must cease to be himself, but only in order that he may be himself in a truer and a deeper sense, and that is what Shakespeare meant by "To thine own self be true."

A man is not a man for what he has in common with the beasts, but, precisely, for those things in which he differs from the brutes. As to the practical, we must not forget that there is nothing so practical as giving motives for a noble life, and that, as our wise Cuban educator, José de la Luz Caballero, wisely said, "To educate is not to give a career for living, but to temper the soul for life." How often is this forgotten nowadays. As Thomas Davidson admirably says, there are three periods or stages in the education of a human being: The actual world, the ideal world, and the way in which the former is used for the realization of the latter. "The first gives us science, the second art, the third ethics, corresponding to the true, the beautiful, and the good."

Till quite recently most of us teachers thought it sufficient to know our subject and the best method of teaching it. Now we realize that the creature to be taught must also be known. Hence, the importance of psychology, or child study. I had the privilege of attending as a delegate of the Cuban Government the first international psychological congress, held at Brussels, Belgium, from the 12th to the 18th of August, 1911. There I had the satisfaction of hearing from the lips of some eminent Belgian and French psychologists that, in spite of the fact that Belgium had been the cradle of the new science, the United States was now at the head in this branch of educational science.

The part I took in their discussions consisted chiefly in an attempt to prove that, although the scientific study of the child's faculties was necessary, there were two other questions more fundamental, namely, What is the child and What is man?

Is the child, and the man into whom he will be converted at the proper time, a temporal or an eternal being? Much depends upon the solution of this problem. What a puny thing must education be if we do not consider it *sub specie aeternitatis*. A moderate study of human nature will convince anyone that a thing which, like the spirit, is out of space, time, and causation, must be, by definition, everlasting, and, consequently, to be prepared both for this world and for the next. The old mediæval system educated man only for heaven; our positivists and materialists wish to fit him exclusively for the earth; the truth is that we should train him for both. And the

best way, nay, the only one, to prepare for eternal life is to act worthily in this. But even if this could not be proved, the fact is that—not to speak of so high a thing as the moral life—not even a noble one is possible without transcending the sphere of mere science. The most interesting questions in pedagogics are those relating to purposes, values, ideals, and ends, subjects about which science knows nothing and has nothing to say. As the great French philosopher, Emile Boutroux, expresses it, "Science can not advise us to do anything, not even to study science." The office of science is to state facts, not to direct anyone in life, which is the most important thing. How beautifully Tennyson utters the same truth in the language of poetry, when comparing science with wisdom he says in his great philosophical poem, "In memoriam":

"Half-grown as yet, a child, and vain—
 She cannot fight the fear of death.
 What is she, cut from love and faith,
 But some wild Pallas from the brain
 Of demons? fiery-hot to burst
 All barriers in her onward race
 For power. Let her know her place;
 She is the second, not the first.
 * * * * *
 For she is earthly of the mind,
 But Wisdom heavenly, of the soul."

Psychology must beware of rendering herself too independent of philosophy, which is the basis of education, and never forget that child study is but a means, the end being the formation of man. For this reason, even more than what a child is, we should investigate what man is, and what he can become through the development wrought by a complete education.

But it is not enough to educate the children. We must educate also the adults. Our system of education will not be complete till we have extended it to all the people, and especially to the working classes, more susceptible of education than those who are not accustomed to work. There is so much to say and to do in this respect. And not only popular education must be extended, but it must be unified, oriented, and spiritualized. Lectures are worth little if they do not arouse the self-activity of the hearers.

Although too long already, I can not end this paper without saying one word about another reform which I deem the most urgent—the solution of the religious problem in education, the most difficult and delicate of all pedagogical problems. The desideratum is to give the necessary training to the religious feeling without teaching the dogmas of any positive religion. Should this congress or your commissioner of education desire it, I will take pleasure in submitting a plan on which I think the problem can be solved.

If education is the conscious and voluntary evolution of the complete human being through ever closer and vaster intellectual, affectional, ethical, and spiritual relations with the whole universe, human, subhuman, and superhuman, if the culture we give is to be harmonious, it is evident we can not leave out the religious feeling, which is a part of our human nature, the organ of faith, or supernatural sense, which may be called spiritual sense, if you do not like the word "supernatural," by which I do not mean anything unnatural or outside of nature, taking this term in its widest sense, but simply what belongs to a high order of nature. Even Herbert Spencer has acknowledged that every step in the natural is a step toward the supernatural.

As education is the supreme object of the State and of life itself, I am happy to hear that you are discussing the project of having a secretary of education. I have never been able to understand why you have a Secretary of Agriculture, and not one of education, since it is far more important to cultivate men, who are ends, than the earth and its plants, which are means. In conclusion, I beg to propose to this great

congress the foundation, under the auspices of the Pan American Union or the Carnegie endowment, of a Pan American society for the discussion and improvement of human education.

I was greatly pleased and encouraged to hear a similar thing proposed by your eminent Commissioner of Education, Dr. Claxton, in his excellent paper read in the first meeting of our section. If the congress does this, it will confer a blessing on our American countries and the world.

DANS QUELLE PROPORTION L'INSTRUCTION ÉLÉMENTAIRE DEVRA-T-ELLE ÊTRE SUBVENTIONNÉE PAR LES TAXES LOCALES, ET DANS QUELLE PROPORTION PAR CELLES DE L'ÉTAT? QUELS DEVRONT ÊTRE LES FACTEURS DÉTERMINANTS DANS LA SUS-DITE RÉPARTITION?

Par JEANNE PUCH et MARGUERITE GALHARRET.

L'ÉTAT ET LES ÉCOLES ÉLÉMENTAIRES.

Depuis la seconde moitié du XVIII^e siècle, les Etats ont compris la grande importance de l'instruction et ont essayé de relever le niveau intellectuel du peuple. Plus un individu est instruit, mieux il accomplit sa tâche; son travail n'est plus routinier, il le modifie sans cesse, l'améliore, le perfectionne. Si chacun apporte toute son intelligence à bien faire son travail, il est évident que la nation entière progresse, s'élève matériellement et moralement. C'est pour cela que l'on peut dire que la valeur de l'individu fait la valeur de la nation.

C'est l'instruction donnée dans les écoles élémentaires qui a relevé le niveau intellectuel et moral de tout les peuples dans ces dernières années. C'est pourquoi ces écoles sont devenues pour l'Etat l'objet d'un soin tout particulier. C'est en effet l'Etat qui doit diriger l'instruction dans les écoles élémentaires. Ses efforts doivent toujours tendre à améliorer les programmes d'études et à les assouplir, selon la diversité des besoins; à faire de ses citoyens des hommes libres, ayant conscience de leurs droits et de leurs devoirs. A cet effet les écoles élémentaires se sont multipliées dans les villes, les villages et jusqu'aux moindres hameaux.

ORGANISATION DE L'INSTRUCTION ÉLÉMENTAIRE.

Pour mener à bien cette noble tâche, il faut d'abord organiser l'instruction élémentaire, et ceci ne peut se faire, ni dans quelques mois, ni dans quelques années, mais réclame un véritable amour du peuple et le souci constant d'améliorer sa condition.

C'est un devoir impérieux pour le gouvernement de ne rien négliger pour maintenir et accroître la valeur des écoles élémentaires. Tel doit être le but des efforts accomplis pour doter chaque commune d'immeubles scolaires véritablement appropriés à leur destination. Ces bâtiments seront simples, mais solides et sains.

Les écoles formées, il faut de bons maîtres pour y enseigner; et ceci demande encore plus de tact, de soins judicieux. C'est la partie la plus délicate de l'organisation scolaire. La valeur de l'école tient avant tout à la qualité des instituteurs et les questions qui touchent au recrutement de ces derniers et à leur rémunération ne sauraient faire l'objet d'une sollicitude trop grande de la part des pouvoirs publics. L'instituteur, en effet, est l'homme qui apprend la vie aux enfants, qui les prépare au travail en même temps qu'à la bonté, à la pitié et leur fait aimer la justice. Son influence sur les enfants est prépondérante. Il est chargé de veiller sur le trésor le plus précieux qui soit: le cerveau, le cœur et la conscience de l'enfant. Il faut donc choisir des hommes assez préparés, assez éduqués, assez dignes pour remplir cette délicate fonction. Pour avoir de bons maîtres il faut tout d'abord leur donner une instruction et une éducation en rapport avec la tâche qu'ils auront à remplir. Il

fait qu'ils répandent un même enseignement, un même courant d'idées justes et nobles: les idées laïques et républicaines. "Ici, d'un ton paisible et tranquille; là véhément et plein d'ardeur; plus loin, prudent et réservé; partout, dans tous les villages de France, dans tous les quartiers des grandes villes, chaque instituteur, selon son milieu et son tempérament, a fait son devoir comme le lui dictait sa conscience. Partout l'œuvre s'est accomplie; et, en un quart de siècle, les maîtres d'école ont transformé un pays qui ignorait la République, et n'en prononçait le nom qu'avec défiance, en un pays républicain." M. Sembat.

L'expérience d'une telle organisation a été faite en France et a donné d'heureux résultats. Cette expérience doit nous servir d'exemple. Des écoles normales seront organisées pour y former les maîtres; le passage par ces écoles normales sera obligatoire. Il faut se montrer très sévère sur les qualités morales et professionnelles que l'on doit exiger des maîtres, et on ne pourra le faire, que le jour où l'on aura rendu enviable la situation matérielle et morale qu'on leur donnera en échange des leurs efforts. Quand l'instituteur vivra heureux dans la nation, l'état sera en droit d'exiger qu'il soit l'exemple et le modèle de ceux qui l'entourent.

Les maîtres formés, il faut que les écoles bâties soient accessibles à tous, sans distinction de rang, de fortune, de religion; que l'enseignement qui s'y donne respecte l'enfant et ne blesse pas sa conscience, en un mot qu'il soit neutre. Et pour que tous ces sacrifices ne restent pas inutiles, il faut que l'état oblige les parents à envoyer leurs enfants à l'école. C'est pour ces raisons, que l'école élémentaire doit être gratuite, laïque et obligatoire.

Mais ce n'est pas suffisant; l'âge obligatoire de la fréquentation scolaire (13 ans) ne permet pas à tous de se développer selon leurs désirs. Beaucoup d'enfants, désireux cependant de continuer leurs études, sont obligés de désertir l'école pour l'atelier, le magasin, l'usine. L'Etat ne doit pas les abandonner, mais leur donner les moyens de satisfaire leur curiosité intellectuelle. D'où la nécessité des œuvres post-scolaires.

NÉCESSITÉ POUR L'ÉTAT ET LA LOCALITÉ DE CONTRIBUER EN COMMUN AU SOUTIEN DES ÉCOLES ÉLÉMENTAIRES.

L'Etat ne peut, à lui seul, mener à bien cette organisation. Il a besoin de l'aide de la localité. De son côté, la commune doit prendre une part active dans les perfectionnements apportés à l'école et qui aident au développement de ses habitants. L'organisation de l'instruction élémentaire est donc l'œuvre commune de l'État et de la localité. Nous allons voir dans quelle mesure chacun d'eux doit y participer.

PART DE L'ÉTAT DANS L'ORGANISATION DES ÉCOLES ÉLÉMENTAIRES.

Dans cette collaboration les plus gros sacrifices incombent à l'Etat. C'est l'Etat qui a le plus de ressources; c'est lui qui est directement intéressé à ce que tous les citoyens soient instruits, puisque de leur culture dépend sa prospérité. C'est lui qui, par ses décrets, rend l'enseignement uniforme et qui a les moyens de faire parvenir dans toutes les communes les améliorations nécessaires.

Son premier soin est de faire construire, dans chaque commune, d'au moins 500 habitants, une école, ou un groupe scolaire dans les communes de plus grande importance. Si la commune était chargée de ce soin, certaines localités trop pauvres ne donneraient que des bâtiments insuffisants et défectueux. Or, c'est une question trop importante de l'organisation scolaire pour être l'objet d'initiatives diverses. L'enfant, appelé à vivre dans l'école, à une période de son existence où toutes les causes extérieures ont sur lui une répercussion si marquée, doit y rencontrer les circonstances les plus favorables à son développement normal. Il doit y respirer un air pur, n'éprouver aucune malformation et sauvegarder sa santé. Enfin, la classe doit être propice au travail. Les locaux doivent être situés dans un terrain sain. L'espace ne doit pas être mesuré; les classes seront bien aérées, bien éclairées et

suffisamment grandes pour le nombre d'enfants qu'elles doivent contenir. Il faut à chaque élève une surface minimum de 1^{m²} (1.25x1.5) et un volume d'air de 5^{m³}.

La cour sera large, plantée de quelques arbres qui donneront une ombre agréable et bienfaisante pendant les mois d'été. Elle sera pourvue d'un préau couvert, assez vaste pour abriter tous les enfants en temps de pluie.

A l'école seront annexés des logements suffisants et bien aérés pour les maîtres.

Les constructions nationales se font généralement par adjudication. Ce système a ses inconvénients. Les entrepreneurs, cherchant à réaliser de gros bénéfices, fournissent des matériaux de qualité inférieure et ne font pas leur travail avec tout le soin désirable. Qu'arrive-t-il? Au bout de peu de temps, certaines parties du bâtiment nécessitent des réparations: d'où, nouvelles dépenses. Il vaut beaucoup mieux dépenser davantage pour la construction des écoles et être sûr d'avoir des édifices remplissant toutes les conditions de solidité et d'hygiène. A cet effet, des inspecteurs compétents seront chargés de surveiller les travaux.

C'est aussi à l'Etat qu'incombe la charge de former et de payer les instituteurs. Nous avons déjà vu pourquoi les instituteurs devaient être préparés à leur tâche par les soins de l'Etat. Cette préparation se fait dans les Ecoles Normales. Trois années d'Ecole Normale sont suffisantes, à la condition que les élèves qui y entrent possèdent déjà un bagage intellectuel assez important. Les deux premières années seront consacrées à leur culture générale; un examen officiel garantirait cette culture. La troisième année serait employée à l'apprentissage de leur métier d'instituteur; à la sortie de l'Ecole, un examen spécial témoignerait de leurs aptitudes pédagogiques. Tout instituteur qui ne serait pas pourvu de ce dernier diplôme ne pourrait exercer, ni dans les écoles du gouvernement, ni même dans les pensions libres, ainsi qu'il est d'usage en France.

C'est un lourd sacrifice pour l'Etat que celui de l'entretien des Ecoles Normales; non seulement, il doit fournir le bâtiment, payer les professeurs, mais encore, subvenir aux frais de nourriture et de blanchissage des élèves. Dans ces conditions, il sera en droit, plus tard, d'exiger d'eux un minimum de services qui pourra être de 10 à 15 ans. De plus, l'Etat pourra obliger l'instituteur, à n'exercer aucune autre profession que celle pour laquelle il l'a préparé. Il lui défendra également d'exercer dans une école libre, même à ses heures de loisir. L'instituteur, étant formé par une République, doit être entièrement dévoué à l'école créée par cette République, c'est-à-dire, l'école laïque. Le métier d'instituteur est un des plus nobles mais aussi un des plus pénibles; les vocations réelles sont rares et pour que l'Etat trouve assez de maîtres, il doit les bien payer. L'expérience nous a montré que dans certains pays où cette profession n'était pas suffisamment rémunérée, les jeunes gens désertaient l'Ecole Normale, et se consacraient, soit au commerce, soit à la mécanique ou à l'industrie, en un mot, à des professions beaucoup plus lucratives. Ce n'est qu'en donnant des traitements suffisants, des avantages sérieux quant à la retraite, des garanties nécessaires, que l'Etat fera du métier d'instituteur une situation enviable et recherchée.

Les instituteurs normaliens étant insuffisants pour le nombre d'écoles, les vides seront comblés par des jeunes gens apportant des garanties suffisantes de leur instruction; mais les normaliens seront toujours avantagés, car seuls, ils auront été véritablement préparés à leur tâche. Par exemple, les instituteurs étant divisés en classes, selon leur âge et leur mérite, les deux premières classes pourront être réservées aux instituteurs normaliens. Enfin, une retraite sera assurée par l'Etat aux instituteurs qui l'auront servi pendant une période d'au moins vingt ans; il pourra jouir de cette retraite à partir de cinquante ans. Pour se procurer les ressources nécessaires à cette retraite, l'Etat pourra retenir, chaque mois, le 5 pour cent du traitement de l'instituteur. En cas de décès de celui-ci, les trois-quarts de la retraite devraient revenir à sa veuve si elle a des enfants; dans le cas contraire, elle n'aurait droit qu'à la moitié.

Ce sont de lourds sacrifices; mais, il faut que l'Etat sache se les imposer s'il veut obtenir de bons éducateurs.

L'Etat ne doit pas seulement s'intéresser aux enfants sains moralement et physiquement. Il a aussi le devoir de préparer à la vie les enfants dégénérés, ces êtres débiles et d'intelligence affaiblie que nous appelons des anormaux. L'éducation de ces enfants ne peut se faire, ni dans les mêmes établissements, ni par les mêmes maîtres que ceux des autres enfants. Il sera donc nécessaire de créer dans les principaux centres, des écoles spéciales pour les arriérés. Ces établissements et leur personnel seront à la charge de l'Etat. La construction des écoles, le traitement des instituteurs et inspecteurs des écoles élémentaires, normales et d'anormaux, sont les charges les plus lourdes du budget du Ministère de l'Instruction publique. Si ses ressources le lui permettent, l'Etat pourra encore faire des dons soit aux bibliothèques scolaires, soit aux musées scolaires.

PART DE LA LOCALITÉ DANS L'ORGANISATION DES ÉCOLES ÉLÉMENTAIRES.

Bien qu'énormes, ces dépenses ne sont pas suffisantes pour mener à bien la bonne organisation de l'instruction élémentaire, et c'est à la localité de compléter l'œuvre entreprise par l'Etat. Si pauvre soit-elle, elle ne doit rien négliger pour assurer la fréquentation scolaire. Elle y est directement intéressée, puisque les enfants d'aujourd'hui formeront la nouvelle génération, qui par son travail, maintiendra ou même accroîtra la prospérité de la localité.

Le premier devoir de la commune est de veiller à l'entretien des écoles; c'est elle qui payera le concierge chargé de la garde et du nettoyage de l'école. Deux fois par an elle fera blanchir les murs des classes, ou mieux encore, si elle le peut, une fois par an elle les fera peindre au ripolin en choisissant des couleurs claires et gaies. Tous les trimestres, elle enverra des personnes compétentes pour s'assurer du bon état des locaux; elle tiendra compte des demandes motivées de l'instituteur et fera faire immédiatement les réparations d'urgence; il arrive souvent que les petites réparations, exécutées à temps sont suffisantes pour assurer le bon entretien et la durée des bâtiments. A chaque occasion où l'école aura dû être licenciée pour cause de maladie contagieuse, il sera procédé d'office, aux frais de la commune, à la désinfection des locaux et des logements scolaires.

Le mobilier scolaire sera fourni par la localité. Il sera composé d'une table-bureau pour le maître et de bancs en nombre suffisant pour les élèves. On tiendra compte, pour la confection de ces tables, de certaines règles d'hygiène. Les tables horizontales ou peu inclinées, déterminent une congestion de la tête de de l'œil, en forçant l'élève à se pencher en avant. L'absence de dossiers, le défaut d'harmonie entre les dimensions et les positions relatives de la table et du banc d'une part, la taille de l'enfant d'autre part, provoquent chez celui-ci une gêne qui a pour effet sa mauvaise tenue. Le développement de la myopie, une attitude vicieuse, tels sont les graves inconvénients d'un mobilier scolaire défectueux. Un règlement spécial prescrira les règles nécessaires à la construction de ces bancs. Cinq types différents seront exigés pour les tailles de 1^m à 1^m.50. L'instituteur mesurera ses élèves à la rentrée et pourra ainsi donner à chacun une table proportionnée à sa taille. La classe sera également pourvue d'une armoire-bibliothèque qui servira à ranger les cahiers, livres, etc., ainsi que le musée scolaire. Chaque classe sera munie d'au moins deux tableaux noirs. Les cartes, en nombre suffisant, seront communes aux diverses classes.

C'est l'instituteur qui doit former le musée scolaire; il lui sera facile de réunir des échantillons des produits de la région, mais il ne pourra réunir un musée scolaire assez important que s'il est aidé par la commune.

A l'école, sera annexé, par les bons soins de la localité, un jardin scolaire, dans lequel le maître pourra donner à ses élèves, des leçons précises de géologie. On étudiera la nature du terrain, les plantes qui y croissent le mieux, les engrais à employer. On ne se bornera pas à des leçons théoriques, on cultivera ce jardin. Les enfants

pourront faire profiter les parents des conseils donnés par l'instituteur et ce sera pour les élèves comme un apprentissage de leur métier d'agriculteur. Ces bons résultats ne seront possibles qu'autant que le maître sera pourvu des outils nécessaires au travail de la terre.

Le chauffage, soit au bois, soit au charbon, sera assuré par la commune.

La commune ne doit pas seulement s'intéresser aux enfants qui ont l'âge scolaire, mais aussi aux jeunes gens qui ont quitté l'école et qui désirent continuer leur instruction. A cet effet, des cours d'adultes seront créés. L'instituteur en sera chargé. La commune, reconnaissante, devra, selon ses moyens, accorder une subvention au maître pour le travail supplémentaire qu'il s'imposera pour le bien de tous. Pour donner plus d'attrait à ces cours d'adultes, l'école sera pourvue d'une bibliothèque de bons livres que les élèves pourront emporter chez eux, ce qui contribuera à répandre l'instruction jusqu'au sein des familles.

Tous les maîtres, qui exercent dans les grands centres et dans les localités dont la population est au moins de 1,000 habitants, percevront sur les fonds communaux une indemnité de résidence qui variera avec le chiffre de la population.

Une caisse des écoles, destinée à encourager, à aider et à développer l'œuvre de l'école publique, sera établie dans chaque localité. Ses ressources se composeront de cotisations volontaires, et de subventions de la commune, du département et de l'Etat. "La caisse des écoles est l'institution la plus humaine, la plus démocratique des conceptions, une association mi-publique, mi-privée, où tous les gens de bien, qui s'intéressent à l'enfance, peuvent apporter leur obole et, ce qui vaut mieux encore, leur affection." Raymond Poincaré. La caisse des écoles est surtout formée pour assurer la fréquentation scolaire. Elle permettra de distribuer aux indigents, des vêtements et des chaussures convenables et appropriés à la saison; de leur donner toutes les fournitures (livres, cahiers, etc.) que les parents trop pauvres ne pourraient acheter. Les livres seront seulement confiés à l'enfant pendant le temps de la scolarité; ils seront rendus en bon état de façon à pouvoir resservir. Une enquête préalable et impartiale déterminera les familles auxquelles ce secours sera attribué. Les fournitures données à l'enfant lui seront retirées dans le cas où il ne fréquenterait pas régulièrement l'école.

L'établissement des cantines scolaires est aussi à la charge de la localité. Chaque jour, au repas de midi, des soupes et des légumes seront distribués aux enfants indigents. Il serait bon aussi que la commune chargeât un médecin de visiter les écoles au moins une fois par mois; il examinerait les défauts de l'ouïe, de la vue, et se rendrait compte de l'état de santé général de l'enfant. Le médecin signalerait au directeur et au maire les enfants chétifs et trop débiles, auxquels un changement d'air serait nécessaire. Et aux grandes vacances ces enfants seraient dirigés, aux frais de la commune, soit au bord de la mer, soit à la montagne ou simplement à la campagne où ils feraient une cure d'air et de soleil de 15 à 20 jours. Ils seraient confiés, pendant ce temps, à la garde d'instituteurs et d'institutrices.

Telles sont les charges les plus importantes de la commune; mais son action n'est pas limitée à ces seules bonnes œuvres. Il y a mille cas particuliers, qu'on ne saurait envisager, et qui sont laissés à l'initiative du maire.

CONCLUSION.

L'organisation scolaire ainsi établie, et soutenue, par l'Etat et la localité donnera de bons résultats. Mais cette organisation ne produira tous ses effets qu'autant que les particuliers s'y intéresseront. L'Etat et la localité peuvent et doivent faire beaucoup pour l'instruction élémentaire; mais ils ne peuvent tout faire. C'est aux vrais amis de l'école, à se grouper pour la défendre contre les attaques de ses adversaires et participer à son perfectionnement. Ils chercheront à augmenter l'autorité morale de l'instituteur, à créer autour de l'école une atmosphère de sympathie et d'intérêt véritables. Cet intérêt se manifestera par des dons à la caisse des écoles,

aux colonies scolaires, aux bibliothèques, aux musées scolaires, etc. Ce n'est pas seulement avec de l'argent que l'on peut soutenir l'école; mais aussi en donnant de son temps, de son savoir, soit en aidant les instituteurs à surveiller les colonies scolaires, soit en leur offrant ses propriétés comme but de promenade et même pour y séjourner, avec leurs élèves, pendant une partie des vacances; soit encore en faisant aux adultes des conférences d'utilité pratique, telles que peuvent en faire des médecins, des avocats, des industriels, des ingénieurs, etc.

Ce n'est que lorsque le peuple entier comprendra l'utilité de l'instruction, et les bienfaits de ces œuvres multiples et la nécessité de s'y intéresser d'une manière effective que les sacrifices consentis par l'Etat, la localité et les bonnes volontés individuelles, donneront tous leurs fruits.

RÉSUMÉ.

L'Etat et les Ecoles Élémentaires.—1°. L'Etat a compris que de la valeur de l'individu dépend la valeur de la nation. Il doit donc chercher à relever le niveau intellectuel du peuple.

2°. Il atteindra à ce résultat en multipliant les Ecoles Élémentaires.

3°. Pour que tous les citoyens se développent dans le même sens, il est nécessaire que l'Etat dirige l'instruction de son peuple; d'où nécessité de programmes uniformes et de décrets pour les appliquer.

4°. Les écoles se sont élevées partout et jusqu'aux moindres villages.

Organisation de l'Instruction Élémentaire.—1°. Pour répandre l'instruction il faut d'abord bâtir les écoles primaires.

2°. Les écoles construites, il faut former les maîtres. Création des Ecoles Normales destinées à préparer de bons instituteurs et à les élever dans un même courant d'idées nobles et justes.

3°. Pour que tout le monde puisse profiter de l'instruction donnée dans ces écoles, elles doivent être accessibles à tous, c'est-à-dire, gratuites; respecter toutes les consciences, c'est-à-dire, laïques; et enfin obligatoires pour que les sacrifices consentis ne soient pas inutiles.

4°. Création des œuvres post-scolaires, permettant aux jeunes gens, qui ont quitté l'école, de continuer leurs études.

Nécessité pour l'Etat et pour la localité de contribuer en commun au soutien des Ecoles Élémentaires.—L'Etat et la localité ont également intérêt à ce que les écoles élémentaires fonctionnent le mieux possible; c'est pour cela qu'ils doivent se partager les dépenses occasionnées par ces écoles.

Part de l'Etat dans l'organisation des Ecoles Élémentaires.—C'est l'Etat qui supporte les plus lourdes charges. Il doit (1°) faire construire les écoles; (2°) former les maîtres dans des écoles spéciales; d'où nécessité de créer les Ecoles Normales; subvenir à l'entretien de ces écoles, payer les professeurs qui y enseignent, assurer aux élèves-maîtres, la nourriture et le blanchissage; (3°) accorder aux instituteurs un traitement en rapport avec l'importance de leur tâche; (4) assurer aux maîtres une retraite suffisante qui les mettra à l'abri du besoin, à partir de 50 ans, et qui reconnaîtra une période de services d'au moins 20 ans; (5) Créer, dans les principales villes, des écoles d'anormaux, et les pourvoir d'un personnel enseignant préparé spécialement.

Part de la localité dans l'organisation des Ecoles Élémentaires.—La part de la localité s'adresse surtout aux détails de l'organisation scolaire: (1) Entretien des écoles; elle ne doit pas négliger les petites réparations; (2) elle fournira le mobilier scolaire, mobilier construit selon les prescriptions de l'hygiène; (3) elle aidera l'instituteur à former le musée scolaire; (4) elle annexera à l'école, un terrain suffisant, appelé jardin scolaire, grâce auquel les élèves recevront, sous la direction du maître, de sérieuses connaissances agricoles; (5) le chauffage des salles de classe sera à ses frais; (6) elle accordera à l'instituteur une indemnité suffisante pour assurer les cours d'adultes; (7) elle dotera l'école d'une bibliothèque et fera, chaque année, don de livres nou-

veaux; (8) elle accordera une indemnité de résidence aux instituteurs; (9) elle organisera et entretiendra la Caisse des Ecoles; (10) elle assurera le bon fonctionnement des Cantines scolaires; (11) enfin, elle organisera les colonies scolaires de vacances.

Conclusion.—Aux sacrifices que sauront s'imposer l'Etat et la localité, s'ajoutera l'aide individuelle apportée par les amis de l'école: dons en espèces à la caisse des écoles, aux colonies scolaires; dons de livres aux bibliothèques et d'échantillons aux musées scolaires; conférences, etc.

THINGS WHICH INTEREST STUDENTS IN THE UNITED STATES, AS COMPARED WITH THE INTEREST OF SIMILAR STUDENTS IN EUROPE AND LATIN AMERICA.

By HARRY ERWIN BARD,

Secretary The Pan American Society of the United States, Incorporated.

Recent developments in the field of higher education represent phenomena of the first importance; these are not limited to a few countries as one might suppose but extend to almost all the countries of the world. Even in India in the arts colleges and universities there is now reported an enrollment of some 63,000 students. During the short period of seven years from 1903 to 1910 the number of university students in Rumania, a country which is generally considered one of the most backward in education, increased 114 per cent. While no country in the world is sending so many students to universities in foreign lands, recent statistics show that the number enrolled in her own institutions continues to increase. Petrograd, a city of about one and one-half million inhabitants, has become a center of more than 30,000 students.

There are now in all Europe some one hundred and thirty-eight or forty State universities; and the number of matriculated students is approximately 282,000, which shows an increase of about 50 per cent during the decade. In some individual institutions the increase has exceeded 200 per cent. In Germany there was one university student for every 2,000 inhabitants in 1870; in 1907 there was one matriculated student for every 1,000 inhabitants.

In the United States the number of students enrolled in the colleges, universities, and technical schools in 1914 was 216,403, an increase of 14,262 over the preceding year. In these figures are represented some 567 institutions. In 1885 there was one student for every 700 inhabitants, and 29 years later, one for every 400 inhabitants. In the other Republics of America there are some 35 State universities, besides various independent faculties, with an enrollment of approximately 80,000 students. Canada has 19 universities and more than 13,000 matriculated students.

A conservative estimate of the number of university students in Europe and America at the present time would be no less than a half million; and this would not include those students who are pursuing professional, semiprofessional, and higher vocational studies in special institutions outside the regular universities, the number of whom it is not easy to estimate.

The rapidly increasing participation in the benefits of higher education would suggest that we are in the midst of an intellectual awakening of unusual significance, of a movement unsurpassed in importance in the history of the race. Any study, however brief or superficial, of the interests of the students who are actually participating in this movement is entirely worth while.

These more than a half million students are distributed in more than 750 universities among some 40 different independent nations. Some reference to the organization and administration of these institutions is necessary to an understanding of the

significance of the interests of students enrolled in them. While practically all have developed directly or indirectly from a common origin, divergency from the original type through the centuries is as important as it is marked.

Universities as they exist to-day in Europe and America fall into three fairly distinct groups which differ from each other in organization and administration as well as in purposes and aims. The universities of the Latin nations, in Europe and America, form one of these groups; the universities of Teuton and Slav nations of Europe form another; and the universities of Great Britain and the United States form the third. However, in all continental Europe, university organization is based on the old four faculty system, and also in Latin America; and preparation for admission to the faculties or the universities is completed entirely in the secondary schools. The college which constitutes such an important part of the universities in Great Britain and the United States has entirely disappeared in continental Europe and Latin America, except in a few rare instances where it remains in what are known as lower art faculties.

In Great Britain and the United States the college of liberal education is still the basis of university organization, and it is in these colleges we find a great majority of the students enrolled. Many colleges exist particularly in the United States entirely independent of any university organizations; the difference between the college and the university is not well marked. The influence of faculty organization is not marked and can hardly be said to exist. For the most part it is still the college which determines the character of the institution where the student enters from the high school and pursues regular courses of instruction for a period of three or four years.

The original four faculties of theology, jurisprudence, medicine, arts and sciences form the basis of university organization in all continental Europe and also in Latin America. However, in many cases the faculty of theology is no longer maintained as a part of the university, particularly in the Latin countries. In some universities are found separate faculties for arts and sciences. In Germany arts and science courses are provided for in the faculty of philosophy, which has become the strongest faculty in the university. In Germany and also in some of the other continental European countries students are given almost absolute freedom of choice of studies; while in the Latin countries both in Europe and America each faculty provides for a single prescribed course leading to the degree of doctor. In recent years, however, there have developed in connection with some of these faculties various kinds of special institutes in which students are offered a wide range of studies in addition to the regularly prescribed courses leading to the accepted degree.

With a few not important exceptions, the universities of continental Europe and of Latin America are State institutions, and under the more or less direct control of the departments of State for public instruction. In Great Britain and the United States most colleges and many of the universities are privately endowed and are practically independent of State control. Even many of the regular State universities are privately endowed, or have permanent sources of revenues over which the State exercises little or no control. But in almost all countries universities enjoy a certain measure of local autonomy, which is maintained with all necessary insistence against interference on the part of the State.

With regard to purposes and aims, in the earliest universities of modern times there were important differences of conception of learning. In the University of Bologna it was entirely professional, designed to prepare the student for a definite and practical career in after life, while in the University of Paris it was sought to provide a general mental training and to attract the learner to studies which were speculative, rather than practical. Later, with the development of modern science, came the conception of learning as a work of research for new knowledge and truth, truth for truth's sake. In general, the three groups of universities may be differentiated according as the emphasis is placed primarily on professional training, re-

search, or general culture. In the Latin countries of Europe and of America the professional faculties lead in importance; in Germany and certain other countries of Europe the faculty of philosophy has come to be preeminent and the spirit of research pervades all departments; while in Great Britain and in the United States special emphasis is placed upon general culture.

It has been noted that in continental Europe and in Latin America students pass directly from the secondary schools to the universities, where they matriculate in the faculty of their choice, and that the ancient college of arts and sciences has ceased to exist. This fact makes a fundamental difference between the university organization of these countries and that of Great Britain and the United States, where the college of general culture plays a notable part in higher education.

In all the Latin countries and also in most of the countries of Europe the great majority of students is found in the professional faculties; while in Great Britain and in the United States the very great majority is found in the colleges of general culture. Until recently, in the Latin countries of Europe and of America a great plurality of students has been found in the faculties of jurisprudence; and also in many of the non-Latin countries of continental Europe. In Germany there has been considerable fluctuation, first one faculty, then another, taking the lead. In Great Britain and the United States the number of students found in any of the professional faculties is insignificant in comparison with the number in colleges of general culture and graduate schools.

If we refer to some of the latest statistics we find that in France the number of students matriculated in the faculty of jurisprudence is 16,465, with 13,910 in arts and science, and 11,656 in medicine. In Italy the enrollment in the faculty of medicine is slightly in the lead, enrollment in the faculty of jurisprudence being only a couple of hundred less. The enrollment in the three faculties of medicine, jurisprudence, and arts and sciences is 8,600, 8,392, 8,125, respectively. In most of the countries of Latin America the faculties of jurisprudence and of medicine compete for first place, with the latter gradually gaining on the former.

In Germany, first one of the four faculties and then another has taken the lead. In 1830 the enrollment in the faculty of theology was greatest, in 1850 the faculty of law was in the lead, and in 1885 enrollment in the faculty of medicine exceeded that of either the faculty of theology or of law; while the enrollment in the faculty of philosophy exceeded that in the faculty of medicine by more than 2,000. Twenty years later the enrollment in the faculty of law was almost double that in medicine, while at the present time the enrollment in the faculty of medicine exceeds that in the faculty of law by more than 6,000, while the enrollment in the faculty of philosophy is only a little less than that in both the faculties of law and of medicine. The enrollment in the four faculties of theology, jurisprudence, medicine, and philosophy is 5,842, 10,296, 16,303, and 25,784, respectively.

It is evident from these figures that even in countries where the old rigid faculty system still obtains the prescribed professional courses in theology, law, and medicine no longer have a monopoly of students' academic interests. If we take into consideration, furthermore, the already large and rapidly increasing number of institutions of higher education, particularly in agricultural engineering and other applied sciences outside of the regular university faculty organizations, the place of such courses in the academic life of the present generation of university students appears still more restricted. It should be noted, moreover, that within these faculties themselves new studies have been introduced from time to time in many instances, until now the courses offered are on the whole almost as much of a cultural as of a professional character. Applied political and social sciences are coming to have more and more interest for university students in all countries.

On the other hand, not many years ago in the United States the professional faculties or schools were of a very low order. The instruction given in them was of an

informative character. Applied, political and social sciences were naturally first given place in the colleges of liberal training; and the number of courses offered in these sciences has increased with great rapidity until to-day they are counted by scores and hundreds. In no other country is there found so great variety and extent of courses as in the United States. These courses as at present organized lead to some seventy-four different bachelor's and sixty-five different higher degrees. But only recently have our professional schools begun to reach a standard comparable to that of similar institutions in other countries. Now, however, some of these schools are not inferior to the best in the world.

It appears, then, that while only a relatively few years ago in continental Europe the academic interests of students were more or less limited to professional studies and in the United States and Great Britain in cultural or arts courses, at the present time there is a marked tendency in favor of studies for general cultural purposes in other countries and professional courses in the United States are being more emphasized and the standard of professional studies gradually raised. If this process continues one of the marked differences between the universities of continental Europe and Latin America and those of Great Britain and of the United States must disappear. It may be said, furthermore, that in the universities of continental Europe and Latin America arts courses are far more professional and professional courses far more cultural than in similar institutions in the United States and Great Britain.

But there are many other things that interest university students which are not of purely academic character, which deserve consideration. The life of the university student is nowhere limited to purely academic pursuits. In the earliest of our modern universities students organized themselves and have continued to do so in different ways. The basis of such organization is usually one of common interests and the purpose social or for the achievement of some more or less definite end of one or another character. Such organizations are always voluntary and in most cases entirely free from any kind of official dictation or restraint.

But whether organized or not, university students usually manage to spend a considerable portion of their time in ways of their own choosing; and in the variety and character of these student organizations, or, in the absence of such organizations, the manner in which students spend their free time, the differences between the several groups of universities are also especially marked.

American universities and colleges are unequalled in the variety and extent of the voluntary activity of the students outside the classroom. The student annual of a leading American university—in itself a volume of very considerable significance, involving a surprising measure of labor and expense—will record the officers and members of from 100 to 130 undergraduate clubs, fraternities, associations, boards, societies, and other organizations. The most striking feature of university life in continental Europe and Latin America to an American is the comparative absence of such voluntary organization. Voluntary student organizations exist, of course, in all countries, but in no other countries are they to be found in such numbers and variety as in the United States, or in Great Britain, in which country some of these have their origin.

THINGS WHICH INTEREST UNIVERSITY STUDENTS IN THE UNITED STATES, AS COMPARED WITH THE INTERESTS OF SIMILAR STUDENTS IN EUROPE AND LATIN AMERICA.

By JOHN D. FITZ-GERALD.

Professor of Spanish, University of Illinois.

The purpose of this paper is to set forth briefly, and yet with some detail, the principal interests of university students in the United States. By the word "interests"

we mean, for our present purpose, the extra-curricular interests of the student, not the faculty or studies that he has chosen for his life work. It is taken for granted that if he elects law, or medicine, or theology, he has some vital interest in the subjects taught by the corresponding faculty. Here we wish to set forth what are his other interests during his student days.

The title of this paper calls for comparisons with "the interests of similar students in Europe and Latin America." For the case of the European student, references will be made by way of similarity or contrast; but the present writer scarcely feels competent to set forth the extra-curricular activities of the Latin American student, and will therefore limit himself to a few matters that have happened to come to his attention. He believes, however, that if he succeed in making a succinct outline of such activities among his compatriots, with occasional reference to similar or dissimilar activities in other countries, the delegates from the Latin-American countries will be able to establish a comparison of similarities and dissimilarities that will be absolutely correct for their respective countries, whereas any general comparison that he might establish for the whole of Latin America could not fail to be inexact when applied to any given country.

At the outset let us determine what are, for our present purpose, similar students in the United States, Europe, and Latin America. Within the confines of all universities in the United States we find a large body of undergraduates—students who have not yet earned their bachelor's degree. In most cases the number of such students far exceeds that of the graduate students. This intermingling of candidates for the bachelor's degree and candidates for the higher degrees (master and doctor) is of course unknown in Europe. No student enters the august community of a German or Austrian university until he possesses his *Maturitäts Zeugnis*, which he obtains at the end of his gymnasium career. No student enters the sacred precincts of a Belgian, French, or Spanish university until he possesses his bachelor's degree, which he obtains at the end of his *collège* (or *Instituto*) career. But this intermingling has its explanation in the peculiar position occupied by our American colleges in the entire educational system of our country, as compared with the systems of other countries.

Of course, it is well known that the European student obtains this degree or diploma at the age of 18 or 19, as the case may be, and after some 13 years of study, whereas the American student wins his bachelor's degree at the age of 21 or 22, and after 16 years of study. It is also well known that in establishing a schedule of equivalence between the various European systems and our own it has been agreed that the student who holds one of the aforesaid diplomas or degrees shall be rated as having attained to the end of the second year of our four-year college course. In other words, it is admitted that as a result of conditions that make for concentration of energy and homogeneity of work, European students in 13 years gain the same degree of accomplishment that we attain in 14 by our less concentrated and less homogeneous conditions. It will thus be seen that in development and attainments our college students of junior and senior standing (i. e., the last two college years) are on a par with the European students who do hold the aforesaid diploma or bachelor's degree and are rated as university students. For these reasons, therefore, we shall consider as similar students all university students beyond this point and age. Thus the extra-curricular activities of the students during these last two college years will naturally come under our observation, despite the undergraduate coloring of those activities as a result of the student's intimate association with his younger companions. On this basis the figures for our total enrollment and our enrollment of university students, as here defined, were, on November 1, 1914 (the latest figures available), as follows.

University.	Total enrollment. ¹	University students. ²
California	3 (3) 5,600	(IX) 744
Chicago	(12) 3,006	(IV) 1,163
Columbia	(1) 6,752	(I) 4,426
Cornell	(5) 5,080 (including duplicates)	(VI) 706
Harvard	(6) 5,054 (including Radcliffe)	(II) 1,961
Illinois	(4) 5,141	(VII) 789
Johns Hopkins	(15) 1,315	(XI) 547
Leland Stanford	(13) 1,893	(XIII) 380
Michigan	(2) 5,637	(V) 1,135
Northwestern	(10) 4,043 (including duplicates)	(XII) 443
Ohio State	(8) 4,387	(XV) 165
Pennsylvania	(9) 4,335	(III) 1,273
Princeton	(14) 1,595	(XIV) 175
Wisconsin	(7) 4,874	(VIII) 756
Yale	(11) 3,135	(X) 663

¹ Excluding summer session, extension, etc.

² Graduates and professional schools, including traditional colleges of law and medicine, graduate schools, and departments requiring at least two years of college work for entrance. These figures are all too low, as it has not been found possible to learn the exact number of juniors and seniors who remained in the colleges of liberal arts and sciences for those last two years instead of using their option to enter, on the two-year college basis, another faculty.

³ Arabic figures in parentheses represent numerical rank in total enrollment.

⁴ Roman numerals in parentheses represent numerical rank in university enrollment.

There are many interests that keep the American university student fairly busy as a social being. There is journalistic work on the university's daily newspaper and literary monthly, and on the various class annuals; there is literary work in the various literary societies and debating teams, in the latter of which remarkable skill in oratory and debate is frequently attained; and there is dramatic and histrionic work in the various dramatic clubs, all of which take very earnestly this voluntary, more intimate study of the technique of dramatic writing and performance. And let it be noted that many of the most active members of these literary and dramatic clubs are not specializing in literature or the drama, and that none of the work of these clubs counts for credit even in the case of those who are specializing. Among Latin-American students these interests flourish even more than they do among us.

Our students are very much interested in music. Nearly all our universities have glee clubs, mandolin clubs, bands, orchestras, and choruses. The work done by these various organizations differs greatly. The glee clubs and mandolin clubs often develop a high grade of efficiency in the matter of technique and rendition, but the instrumental music is seldom serious, and the songs, whether jovial and rollicking or sentimental and serious, almost always deal with some phase of university life, its activities and friendships. These two kinds of clubs are at the present moment suffering a partial eclipse in favor of the more serious bands, orchestras, and choruses. The glee clubs and mandolin clubs never had any women members. The bands, by mere chance, seldom have any. But, so far as I know, a goodly number of women is always to be found in the orchestras and choruses. These three organizations do a very high grade of work, both in execution and in the kind of music performed, since all the best forms of music, including symphonies, grand opera overtures, and oratorios, are to be found in their repertoires. Still, I believe it would be difficult for the work of our glee clubs and mandolin clubs to stand comparison with the charm of the work done by the Estudiantinas of Spain, and we have nothing to correspond exactly to the celebrated Männerchor of Germany or the equally good, but less widely known, Orfeones which are so numerous in northern Spain (especially in the entire Cantabrian country).

With reference to the athletic interests of the American university student, it is not too much to say that in their various forms they dominate the extra-curricular activity of the student throughout the entire academic year. In the autumn we have football. During the winter months football gives way to hockey, basket ball, water polo, and indoor athletics. Most indoor meets occur in the evening and in

some cases are followed by an hour or an hour and a half of dancing, thus making them social as well as athletic events. In the spring all our universities blossom forth with vigorous teams for track athletics and for our great national game—baseball. And the early summer brings us rowing for all universities that are located near suitable water.

These are not the only sports that are to be found at our universities, but they are typical, and represent fairly the activity of the student body in such matters. If we were called upon to point out which are the most important five among them, there would be no hesitation in saying football, baseball, and track athletics for the whole country, with basket ball in the West and rowing in the East. And despite the fact that baseball is our great national game, popular alike with noncollegians and collegians, and despite the international prestige that has occasionally been won for us by our crews, who in international regattas give good account of themselves in competition with the great English crews, it can be asserted without fear of contradiction that football is *the* game in university circles, although it means little or nothing to the average person not connected with university circles. But this popularity does not mean that the game is universally approved, even in academic halls. There are many, despite their being in the minority so far as one can learn, who disapprove the game and consider it brutal, and, as a sport, dangerous beyond the limits of reason.

Some years ago Columbia University abolished the sport. There was a wail of protest from the students and alumni, and dire predictions were made of fatal results to the life of Columbia if such a suicidal policy were maintained. It was even suggested that it would be well to prepare Columbia's epitaph for the event of her certain demise in the near future. The reasons for the Columbia action were set forth in considerable detail in the annual report of the president for 1906. Briefly summarized, the reasons were: First, the brutality and danger of the game; second, the demoralizing effect it had upon the whole student body (upon those who played and were over-trained and strained even when not hurt in accidents, as well as upon those who were mere spectators); third, its deleterious effect upon all other activities of the student body, whether curricular or extracurricular; and fourth, the fact that as a result of the first three reasons the whole effect of the game was antagonistic to the purposes and ideals of American colleges and universities, and at war with every sound principle of college sport or athletic exercise. In his report for November 1, 1915 (p. 14) the president again refers to the abolition of the game, and says:

"Its beneficent effects were not long in showing themselves. The undergraduate body grew rapidly in number and improved in quality. The effectiveness of the academic work during the early part of the first half of the academic year was greatly increased. The tone and spirit of the student body were vastly improved. Not all these important gains were due to the abolition of intercollegiate football, but they took place in spite of the absence at Columbia of what had been supposed to be an absolute necessity to American undergraduate life."

The game was abolished also at Northwestern and at Wisconsin, both of which institutions have since restored it, under the radically revised rules that are now in force. California and Leland Stanford Junior, also abolished it and put in rugby. This year California has restored American football, as has also Columbia, but under very careful restrictions that look to safeguarding the curricular and the other extracurricular activities, and the dean of Columbia College reports that he has not noticed any ill effects to date on the academic work of the students.

The general rules under which the game is now played, as compared with those of 1905, show a great improvement, but the list of fatalities and serious accidents of this season's playing throughout the country leaves us with a need for further revision along those lines.

Some two or three years ago a medical journal of standing published the opinion of an ex-surgeon of the United States Army in opposition to football as a sport, on the

ground that even in cases where no serious accident befell a player, he found that the strain of the training and playing of football often left effects which in after years were a serious drawback to the efficiency of the man as an officer. Inquiry at West Point elicited the following reply concerning the aforesaid opinion:

"With reference to the immediate effects of football on cadets my observations are based on an experience of two seasons at the Military Academy; during each season about 60 men were in training over a period of three months. A medical officer detailed for duty with the football squad is present at all the games and at the important practice periods. All applicants for the squad are examined physically before the season begins and physical examinations are frequently made during the season. All injuries are seen at once by the medical officer and serious ones are admitted to the hospital.

"The statements made in this memorandum [referring to the aforesaid opinion] are not in accordance with my observations in regard to the effects of football at the academy nor with my experience with officers in the Army. During the two seasons in which I have been on duty at the academy no case of injury has occurred as the result of football of sufficient severity to lead to permanent disability, and during my service in the Army of 24 years I do not recall the case of any officer whose health or efficiency was unfavorably affected by football training. Serious physical and nervous effects of overtraining have not been observed among cadets, and this is believed to be due to the fact that all cadets receive a thorough and systematic course in physical training extending over the entire four-year course, including gymnasium work, swimming, riding, fencing, boxing, and military drill, and are thus in a far better condition to undergo the intensive training of football than is the ordinary collegian.

"The freedom of football players from serious injuries at the academy during recent years is attributed to the careful oversight on the part of the medical officer and the coaching staff. Accidents are far more likely to occur when a player begins to tire and the fine edge of mental and physical fitness has begun to turn. If at that point the player is taken out of the game most of the serious accidents of football may be avoided. This is the policy which is followed in practice at the academy and which has given excellent results."

The opponents of the game would consider this report of the United States surgeon on present conditions as good evidence of their contentions that the game is unreasonably dangerous as a sport, since so much and such expert supervision by medical men is necessary to avoid the usual results of the game's being played.

It is known that football has been introduced into several Latin American universities, and if I be not in error it is usually the rugby game; but I do not know to what extent it has been organized as an intercollegiate or an interuniversity sport.

Some of the opponents of the game have compared it unfavorably with bull-fighting, and I am bound to admit that as a spectacle, with its kaleidoscopic coloring, and its feats of daring and agility done in the open where all the spectators may see all the fine points, the bull-fight can make a far better case than football. Lest I be personally misjudged because of that remark, let me add that my own opinion is that both are abominations. I hold no brief, either, for the German *mensur*, which is brutal enough, in all conscience, and utterly useless as a spectacle to interest a large academic audience, since its spectators are practically limited to the members of the two corps concerned. But despite the wounds that are deliberately inflicted in the course of the duels, there are seldom any fatalities, there are no after-effects of overtraining, and the other after-effects are seldom serious; all of which occur with disturbing frequency in football. But whether one approve or disapprove of football, all will agree that it is our most popular and our most criticised academic sport.

So far we have discussed only the organized sports, and it goes without saying that none of these could have reached their present state of development if our universities did not furnish our splendidly equipped gymnasiums, athletic fields, and swimming pools. But our students indulge in many other sports that are either not organized at all, or are very loosely organized, and for that reason we shall consider them all as individual pastimes. Of these swimming in summer and skating in winter are probably the most popular. Long walking tours are indulged in by our

students almost as much, I believe, as by the German students. Except in the western part of our country, our students ride horseback considerably less than do the French students, and very few of us anywhere in the country learn high-school (*haute-école*) riding; and we ride to hounds far less than do the English or Irish. Despite the existence of the numerous studenten-corps, with their periodical mensur, German students indulge in less real fencing, whether with rapier, broadsword, or single-stick, than do the French and Spanish students. We, too, are behind the French and Spanish students in the number who devote themselves to fencing, and yet among those of us who do one frequently meets a very good swordsman. Tennis and golf have also their adherents among us, tennis being played by more students than any other single sport, and golf becoming more popular. In tennis, as well as in fencing, intercollegiate matches are frequently arranged. The same may be said of the noble game of chess, which is fairly popular among us, and, when played at all, is often played with a high degree of skill.

Another absorbing interest is the fraternity life of the students. A fraternity is a self-governing body of young men who have banded together as a brotherhood, and a sorority is a self-governing body of young women who have banded together as a sisterhood. The individual chapters seldom have an active membership of more than 40, but the national organization is often very strong, with many chapters in universities all over the country. These brotherhoods and sisterhoods are not to be likened to monastic brotherhoods and sisterhoods. They have no religious object in view, are unconnected with any church or religious organization, and have no religious tests for membership. Their chief aim is to foster friendship and brotherliness among the members, and this accounts for keeping the membership down to such small numbers in the individual chapters. All the men, or women, as the case may be, in a given chapter try to become intimately acquainted with all the other active members of the chapter during the whole of the college course. The older members keep an eye on the study records of the younger members and give advice and aid when it is needed. Most of the active members of a fraternity try to live in the chapter house so as to get in full measure the benefits of this close, intimate association. Every chapter is financially independent of the national organization and is entirely responsible for its local expenses and management. Each chapter arranges its own social program, subject only to general faculty regulation in the university to which it is accredited, the said regulations usually being limited to such matters as determining the number of social functions that may be held in any semester, and fixing the hour for closing informal affairs (e. g., midnight), and the hour for closing formal balls (e. g., 2 a. m.), and the requirement that all affairs in which both sexes take part shall be duly chaperoned. As the majority of the social events are those open to both sexes (the gentlemen inviting ladies of their acquaintance to attend their dinners, house parties, dances and balls, and the ladies giving receptions, teas, and suppers to gentlemen of their acquaintance), the members of these fraternities and sororities have a good deal of social experience that is not only pleasant during their college careers but distinctly advantageous in later life. Another advantage of the fraternities is that membership in a chapter of any fraternity with a national organization gives one the entrée into every chapter house of that fraternity throughout the entire country. It is not too much to say that students who become members of a fraternity often find that some of the strongest friendships of their lives are formed through the associations thus brought about.

Among these fraternities there are a few that have become honorary. Membership is acquired at the end of one's college course, on attaining the bachelor's degree. Nominations to these fraternities are based upon the standard of scholarship maintained in all subjects throughout the entire four years. All students whose grades are above a certain fixed minimum must be nominated and their respective records shown. No student can be nominated under any circumstances if his total grade

falls below the fixed minimum. Within this selected group the competitive element is still further introduced by the rule that only a certain percentage of the graduating class can under any circumstances be elected. Consequently when more than that percentage earn nomination, the chapter proceeds to elect on the basis of personality; and in order to secure election the candidate must receive three quarters of all the votes cast in his particular case. All serious students look forward to winning election to one of these fraternities as one of the greatest rewards in their entire careers, although the university or college authorities as such have absolutely nothing to do with bringing about the election. The decorations of these fraternities are proudly worn by their recipients, and the membership forms actually the elite of our educational output. The oldest of these fraternities is Phi Beta Kappa (ΦBK) founded on December 5, 1776, and hence only a few months younger than our Nation. It is representative of the aforesaid standards for work done in the humanities. Sigma Xi (ΣX), although younger (founded in 1886), maintains similar standards for work done in science. It should be added that both these fraternities hold their standards so high that only a relatively small number of the colleges and universities of the country have been granted a charter for the establishing of a chapter.

As has already been said, none of these fraternities has any religious object or affiliation, or any religious test for membership. Consequently, despite the similarity in name, they are totally unlike the celebrated Spanish *cofradías*, either of olden times or of the present day. And for the same reason, despite a general similarity in social activities, our fraternities are unlike the well-known *Cercle des Étudiants Protestants* at Paris.

So far as the present writer's experience goes, the organizations that most nearly correspond to our fraternities are the German *Studenten Verbindungun* or Corps. The idea of *Bruderschaft* is dominant in both, and the singing of songs of student days and of friendship is a prominent activity in both, although I am bound to confess that in my judgment the quality of the songs (both words and music) is on the whole better among the Germans than among us, and I believe, too, that in general their rendition is better than ours. Furthermore, our student songs lack universality and too often suffer from an exaggeration of local interests. It would be difficult to have a national gathering of the members of any fraternity and get up a program of songs that would appeal to many in the gathering as a common heritage. Not so the German Corps *Studenten*. They have a few local songs; but the vast majority of the best known songs are a kind of *lingua franca* of good fellowship and are the common heritage of all university students throughout the country. Like our fraternity man, too, the Corps Student has the entrée into the home of every branch or chapter of his corps throughout the country. But there are two important matters in which the German Corps and our fraternities differ. The Corps, so far as I know, practically never have any social activity in which the ladies take part. Hence none of that element of social experience figures among their advantages. On the other hand, our fraternities lack utterly the political character or bias that dominated the reorganization of most of the Corps after the Napoleonic wars, a character that they have not yet wholly lost, although it has been on the decline somewhat in recent years.

The American Students' Club and the American Girls' Club, both at Paris, succeed pretty well in combining the advantages of fraternity (or sorority) life and club life, although, of course, the one is not a fraternity, and the other is not a sorority. The social affairs offered by both correspond very well with similar affairs between the fraternities and sororities here at home.

The great Association Générale des Étudiants de Paris is a powerful organization that has no counterpart among us. Aside from its general clubhouse features, these additional advantages should be noted: Specially reduced prices at theater and opera, special reductions on horse hire, and on riding and fencing lessons, and a 50 per cent reduction on fees for medical attendance; and in case of need, special pro-

tection from the police and defense in court. On a certain occasion, about 20 years ago, a student was arrested for some trifling matter that none the less was of such a nature that the arrest had a flavor that was pronouncedly political. At a special meeting of the Association Générale des Étudiants de Paris the case was presented by a fellow student. The association voted for a strike and demonstration, and turned out in full force, marching down the boulevards and crying out in unison and in time to their marching: "Rendez-le, rendez-le, rendez-le."

This brings us naturally to the entire question of political activity among students. Some of our students are interested in politics, even to the point of making stump speeches throughout an entire campaign in favor of a certain candidate or of a certain cause, and then serving as a watcher at the polls on the day of the election. But once the election is over and the result is announced, everyone will accept the verdict of the people. There will be no manifestations for the purpose of showing disapproval. It would be impossible to rouse the student body to the point of making an organized demonstration or manifestation of a political nature against those who had been placed in positions of leadership, no matter how unpopular the result of the election might be. Nor would it be possible to cause such a demonstration to be made by students during the conduct of the campaign.

Some years ago the students of the University of Naples made a demonstration against some political action that had either just been accomplished or was still pending. The rector ordered the university closed temporarily. The students secured a telegraph pole, and using it as a battering ram, broke in the gates to the university's courtyard. In the *mêlée* the janitor was killed, and the demonstration became a riot. The minister of public instruction at Rome finally had to take cognizance of the situation and closed the university for three months, thereby postponing by a whole year the date at which the students would be able to finish the studies necessary to complete their professional courses and enter upon their careers.

Still more recently in the University of Madrid the students were making a rather mild demonstration against some political action that was then pending, and in order to scatter them back to their homes and away from the capital, the minister of public instruction had the brilliant idea of announcing a vacation of several days for the Madrid University. The effect of this action by the minister was exactly the reverse of what had been desired. The demonstrations that had thitherto been mild became wild, and the students began parading en masse through the principal streets, carrying banners with such legends as "We don't want any extra vacations," "Give us our classes," "Return our professors to us," and "Reopen the university." The troops were called out, and the students then paraded to the ministry and dared the minister to order the troops to fire, when all that the students were asking for was the reopening of the university.

No such political interest or activity is ever indulged in by our students, either singly or collectively; and, as said before, it would be utterly impossible to rouse our students to the point of making any such political demonstration.

In Latin America the university students have centros, or clubs, whose activities overlap those of several distinct interests among us. Here they discuss matters related to their situation at the university; they present their point of view to the university and they are generally recognized and their suggestions receive due consideration. In these centros, and elsewhere, the students publish magazines devoted to literature, or politics, or the discussion of topics related to their studies. I am inclined to believe that on the whole the literary performances in these magazines outclass our own; and I am convinced from long experience that the oratorical and histrionic ability that is exhibited in these centros surpasses what our students are able to produce in our corresponding clubs. I realize that the reason back of this difference is fundamentally one of race and temperament; but that does not alter the fact. Some of these centros exist through interest in political questions, and they

frequently make themselves felt throughout an entire election campaign, or even exert powerful pressure toward bringing about the political results desired.

Among the most advanced of our university students we have in many universities graduate clubs, so called because only students who already hold a bachelor's degree of some kind are admitted to membership. The purpose of these graduate clubs is chiefly social and their monthly meetings are usually very enjoyable affairs. In order to give some special point to the meetings there is often a short address by some member of the club (or by some member of the faculty), who presents in a non-technical manner the general importance or significance of his specialty to the world of scholarship and to the world at large. Occasionally, too, the members of these clubs discuss problems, administrative and other, that concern their general relations to the university and its administration. From these discussions there issue sometimes memoranda which, representing the students' point of view on a given problem, are presented to the authorities, and receive due consideration and answer even when the decision of the authorities is adverse to the students' suggestions. In this respect the activities of our graduate clubs correspond to some of the activities of the centros among Latin-American students.

Cosmopolitanism is also flourishing among us like a green bay tree; but as there are numerous cosmopolitan clubs in most of the countries which are represented in this congress, there is no need for our discussing the cosmopolitan clubs in this paper.

Among students of belles-lettres we naturally expect to find an interest in things literary, but I should like to speak for a moment of the literary interests of students who are specializing in nonliterary subjects. Although I shall mention only a few individual cases, my reason for mentioning them is that they are not sporadic, but very largely typical. In Spain during the last two years of the last century a young student received the degree of licenciado en filosofía y letras at the Universidad Central. During his entire university program he never had a course in natural science. By private study he won as early as 1902 the position of assistant curator of the National Museum of Natural History at Madrid. Before 1910 Alfonso XIII had created him a knight for his services to science, and to-day he is recognized as Spain's leading authority on mammals. He still keeps up his humanistic interests, reads, writes, and speaks English and French, and reads easily Greek, Latin, and German. He is also an artist of no mean ability, as is shown by the beautiful colored sketches which he paints as illustrations for his scientific books.

On the steamer going to Rio in 1914 I met a young Brazilian, 17 years of age, who had still one year to do of a preparatory course in electrical engineering in a school near Philadelphia. He entertained a party of us one evening for more than three hours with information about Brazilian and Portuguese writers and with long quotations, beautifully recited, from their works. On the same steamer there was a young lieutenant of the Peruvian army, who a night or two later duplicated, for Peruvian writers, the performance of the young Brazilian. Among the Latin American students at our own universities we find many students of engineering or agriculture who can be called upon at any time to make a recitation of prose or verse in a social gathering. In all the capitals we visited in South America we were received by delegations of doctors, lawyers, and scientists, many of whom spoke English and French beautifully. I very much fear that from similar faculties among us we should be unable to show an equal proportion equally able to speak French and German, which are the languages that have hitherto been most studied among us. This ability on the part of these doctors, lawyers, and scientists shows what must have been some of their nonprofessional activities as students.

Although I am convinced that very few even of the exceptional American students of things nonliterary could match the performances of the aforesaid Spaniard, Brazilian, Peruvian, and other Latin Americans, I do not mean to imply that no such literary interest exists among our nonliterary students. Quite the contrary. Things

are improving slowly in this respect, and one of the most influential agencies is to be found in our foreign-language clubs. These clubs (French, German, Spanish, etc.) usually meet fortnightly throughout the academic year. The membership is composed of men and women students of two kinds—those who are specializing in the language indicated by the club's name; and those who are specializing in other things, but wish to continue their interest in a language that they have previously studied. The meetings consist of recitations, short talks, and games all in the language concerned, together with music typical of the country. At the close of the program there is usually a half hour or more of informal chatting, in the language of the club. The club's work for the year centers usually in a dramatic evening at which some standard play (French, German, or Spanish, as the case may be) will be performed by the members of the club, who must naturally have given a deal of study to the piece.

Although it is entirely devoid of the linguistic interest that is at the bottom of our language clubs, the Russian Students' Club at Paris comes the nearest (in my experience) to paralleling the activities of our language clubs. There, although, of course, on a much larger scale, we find the same free, mutually respectful, social intercourse between the sexes, the same international membership (for the club might better have been called the Slavic Students' Club), with the resultant cosmopolitan atmosphere, and the same literary, dramatic, and musical interests both for the ordinary meetings and for the big functions.

There remains one other interest that ought to be mentioned even in so brief a sketch as this, for it is indeed one of the most important: I mean the religious interest that is to be found among our students. It is just as unofficial and just as voluntary as any of the other interests we have been discussing, and lies entirely in the hands of the students. It is absolutely unrelated to any political party or interest, and frequently has no direct connection in an official way with any ecclesiastical magnate. It springs from the individual student's desire to know more about God, about his relations to God and about his relations to his fellowman as those relations are controlled and shaped by his beliefs concerning God and concerning his own relations to God. This interest manifests itself in a variety of ways, of which only a few need be mentioned. The religious element in the work of the Young Men's Christian Association is due to this interest on the part of the students. But as the general work of the Young Men's Christian Association is known and approved in Europe and in Latin America (Argentina, Chile, Uruguay, and I know not what others, having sent official delegates to the annual camp at Piriapolis), we need not discuss this particular manifestation of the students' religious interests, except to say that for the women students the Young Women's Christian Association forms an exact counterpart to the Young Men's Christian Association. Another manifestation of religious interest is found in the attitude of men or women who feel a personal responsibility that forces them so to conduct their own lives that they may be able to influence other, and especially younger, students in a way that will help them not to waste their time and their opportunities in careless, idle, or riotous living. And there is finally the voluntary formation of two kinds of Bible classes: First, Bible-teacher training classes, under competent leaders, for students who themselves wish to become Bible teachers; and second, classes for Bible study, under the leadership of some more advanced student or of some beloved and revered professor whom the students ask to assume such leadership in addition to, and outside of, his academic duties.

It will thus be seen that the extra curricular interests of the university student in the United States are distinctly varied, and that, embracing as they do the physical, mental, moral, social, and religious sides of his or her nature, they aid very materially in the production of the well-rounded man or woman that makes a good citizen and a beneficently influential member of society.

¿CUÁL DEBERÍA SER EL FIN PRIMARIO Y CUÁL EL SECUNDARIO DE LAS ALTAS ESCUELAS DE INSTRUCCIÓN? ¿HASTA QUÉ PUNTO DEBERÍAN DETERMINARSE LOS CURSOS ESCOLARES EN LAS ALTAS ESCUELAS, POR LOS REQUISITOS DE ADMISIÓN AL COLEGIO; Y HASTA QUÉ PUNTO POR LAS EXIGENCIAS DE LA VIDA INDUSTRIAL Y CIVIL?

Por ANDRÉS M. ZÚÑIGA,

Director del Instituto Nacional de Occidente, Nicaragua.

No hay pueblo sobre la faz de la tierra que, teniendo conciencia de sí mismo, de su papel en el concierto humano, del poder que se llega a alcanzar en fuerza de la evolución sociológica, del soberano progreso histórico, mediante el cerebro que ilumina gloriosos derroteros, y la mano que exprime, firme y jocunda, en las argentinas ánforas de la civilización, los racimos sazonados y jugosos de las prácticas conquistas del trabajo; no hay pueblo, decimos, que, en esas normales condiciones, no se interese seriamente, no se preocupe de veras, en resolver en su propio suelo, y de la manera más práctica y posible, los graves y trascendentales problemas de la enseñanza, en sus diversos grados, en sus distintas fases.

Y columna cardinal en ese conjunto arquitectónico de la cultura nacional, del progreso humano, es, sin duda, la enseñanza secundaria o alta escuela de instrucción, que propendiendo desde su constitución efectiva en los tiempos modernos, en todas las latitudes, a un centro común, único, de atracción filosófica, de gravitación pedagógica, de reglamentación educativa y práctica, no ha sido sin embargo uniformemente comprendida, ni categóricamente deslindada, ni definitivamente orientada.

En Francia se ha luchado a porfía por organizar sistemáticamente esa enseñanza; han lidiado con ardor la escuela clásica con su áureo bagaje de lenguas y literaturas antiguas, y la escuela moderna, utilitaria, que aspira a basarse en las lenguas vivas y las ciencias experimentales.

Inglaterra ha tratado de reformarse en sentido inverso del procedimiento francés, pues como lo expone Becerro de Bengoa en su "Enseñanza en el Siglo XX," mientras Edmond Desmoulins se empeña en implantar en toda su amplitud el "sport" de la educación inglesa en Francia, Inglaterra reflexiona, y más que satisfecha de la lozanía de su juventud que trabaja mucho con el cuerpo y poco con el alma, quiere ensanchar, a estilo francés, la cultura superior, espiritual, en sus colegios.

Alemania, sin menguar sus ponderadas exigencias, ha modificado notablemente, en los últimos tiempos, y a iniciativa de su mismo Emperador, los planes y reglamentos de sus gimnasios y liceos, para librarse del proletariado de bachilleres, pues sus establecimientos han producido un exceso de eruditos, mucho mayor que el que puede soportar la nación, al extremo de que Hermann Lietz pide a gritos la reforma consistente en sustituir la instrucción que sólo educa el espíritu, por la educación que realiza el desenvolvimiento armónico de todas las facultades del individuo; la enseñanza teórica, puramente intelectual, por la amplia y sólida educación comprensiva de la cabeza, la mano y el corazón, esto es, la inteligencia, la voluntad y el sentimiento (head, hand, and heart).

En los Estados Unidos de Norte América ha habido un movimiento acelerado y poderoso también para mejorar las disciplinas, las tendencias y la finalidad de las altas escuelas de instrucción, ensanchándolas y reformándolas, ya con la serie progresiva de "freshmen" a "seniors," de su famosa Universidad de Harvard, ya con mil diversas formas y graduaciones de carácter clásico y tradicional, o ya mixto o moderno, pero siempre muy práctico, muy sugestivo y muy humano.

En la América Latina se ha trabajado fuertemente, extraordinariamente, en medio de cataclismos políticos, por asimilar, por cristalizar la enseñanza superior en forma adecuada, estable y provechosa, en términos que correspondan al progreso universal y a las condiciones peculiares de cada país, de cada localidad. Chile y la Argentina

son dos grandes laboratorios de cultura a este respecto, dos emporios opulentos de riquezas escolares, dos agentes potentísimos de transformación pedagógica, por su benéfico cosmopolitismo en estas latitudes latinas.

¿Y cuál ha de ser el fin primario y cuál el secundario de estas altas escuelas de instrucción, que tanto preocupa a todos los pueblos, grandes y pequeños, y a todos los hombres que saben aquilatar los beneficios de la cultura?

Sea cual fuere el campo ideológico en que vivamos y el punto de vista que adoptemos para determinar nuestros conceptos pedagógicos sobre los problemas palpitantes de la enseñanza pública, ésta no podrá perseguir otro fin racional, dentro de los humanos límites, que prepararnos convenientemente, como lo exige Spencer, para la vida completa; que dar al cuerpo y al alma, como lo expresa poéticamente el divino Platón, toda la belleza y toda la perfección posible; que disponernos y acondicionarnos sabiamente, como pretende Mme. Necker de Saussure, para cumplir debidamente nuestro destino en la vida.

Pero como la enseñanza comprende las funciones muy diversas y complejas de instruir y educar, transformar y enaltecer, nos detendremos, antes de entrar en el asunto primordial de estas líneas, en consideraciones muy pertinentes al tema propuesto.

La obra de la enseñanza, la esfera simbólica de la cultura humana, gira al derredor de un solo eje, el espíritu, en sus diversas etapas, presentando dos polos opuestos, pero complementarios, la educación y la instrucción, y un solo centro de convergencia, centro psicológico, centro humano, el ideal sublime del perfeccionamiento en todo orden, físico, intelectual y moral, religioso y social.

Instruir, literalmente hablando, es la simple operación de comunicar a otro, de trasladarle nuestros conocimientos; es acción encaminada a la inteligencia, frecuentemente a la memoria, y no a la memoria asociativa, reflexiva, racional, sino a la memoria mecánica, sensible y fonográfica.

Instruir de esa suerte, no es vigorizar, desarrollar, elevar, crear; instruir así es acumular, decorar, amueblar, según la frase gráfica de Montaigne.

La instrucción, meramente instructiva, no forma hombres de trabajo, seres de vida propia, ni ciudadanos de acción, sino teóricos engorrosos e inútiles, enciclopedistas estériles para la bienandanza nacional: *vix non scholæ discitur*.

La educación abarca, por el contrario, un conjunto de operaciones armónicas muy diversas, pedagógicas y metodológicas, referentes a la totalidad del ser humano, sin exclusiones funestas, sin esas desviaciones absurdas que desvirtúan por completo la eficacia de las mejores legislaciones, la excelencia de las más acertadas disciplinas escolares, y que restringen o destruyen los copiosos frutos de labores seculares en que se han empeñado fuerzas y recursos muy valiosos.

Educar es vigorizar, desarrollar, perfeccionar, por cuantos medios estén a nuestro alcance, al individuo, a la familia, a la sociedad; es convertir al hombre, como dice Mill, en instrumento de dicha para sí mismo y para los demás; es dignificarlo, como quiere Marión; divinizarlo, como pretende el ilustre Seiler.

La instrucción es, pues, exclusivamente intelectual, no va más allá; y la educación es a la vez física, moral e intelectual, y en tal manera y tan completamente, que cada una de esas partes reviste simultánea y sucesivamente el triple carácter físico, moral e intelectual.

En la educación física, por ejemplo, tenemos: primero, el conjunto de elementos y ejercicios que nos proporcionan la salud: física de la física; segundo, la virtud de moderarnos en la satisfacción de nuestras necesidades de orden inferior: moral de la física; y tercero, el perfeccionamiento de los sentidos: intelectual de la física.

Y así análogamente, respecto de las otras partes, moral e intelectual.

Se puede sostener, pues, que, siguiendo métodos y procedimientos extraviados o incompletos, parciales, hay educación sin instrucción y viceversa.

Quien por una serie de ejercicios personales, reflexivos, sin acumulación de elementos científicos, llega a ponerse en condiciones de resolver directa e instintivamente, con rapidez y acierto, los problemas usuales y aun complicados del cálculo mercantil, será una persona educada a ese respecto; mas si su cabeza sólo retiene con fidelidad las expresiones matemáticas, las fórmulas necesarias para resolver con destreza esos mismos casos, sin conciencia, sin completa seguridad de lo que hace, habrá entonces mera instrucción.

Pero, con todo, la educación y la instrucción, para que la obra de la cultura sea eficaz y verdadera, se han de complementar y completar recíprocamente, y esto se alcanzará cuando la instrucción sea eminentemente educativa, y la educación intensamente instructiva; cuando la instrucción, lejos de separarse de la educación, de omitirla o repelerla, se constituya fielmente en su dócil instrumento de progreso; cuando la instrucción brinde y proporcione a la educación sus valiosos materiales de cultura; cuando se convierta, por maravillosa correspondencia, en su objeto propio, en su fin inmediato, en su medio adecuado: en su objeto, mejorando y perfeccionando al hombre mediante el dominio de los conocimientos prácticos; en su fin, por la asimilación de la alta ciencia, de la verdadera sabiduría; y en su medio, proporcionando el tesoro de sus cuantiosos elementos para la gimnasia de todas las fuerzas, facultades y aptitudes humanas.

Y por este carácter diverso y convergente, de esas grandes operaciones de la enseñanza, se definen también, se determinan, las líneas características de la organización escolar, las direcciones clásicas de los estudios, la naturaleza de los ejercicios y la índole de los elementos materiales que deberán emplearse, según los casos y problemas; ésto es, los sistemas, los métodos, los procedimientos y los medios auxiliares.

En términos más precisos, podemos decir que en la obra de la enseñanza campean estos elementos capitales, correspondientes a la educación y a la instrucción: el hombre que reduce todos los conocimientos a un todo, a una unidad central, la mente; y la gran jerarquía de las ciencias, la naturaleza, lo objetivo, que carecería de todo valor científico y pedagógico, si no estuviera también reducido, por admirable convergencia, a la misma unidad central a la misma mente humana.

Por eso diremos con James Pyle Wickersham, que el complicadísimo problema de la enseñanza debe considerarse desde dos puntos de vista; la naturaleza del hombre, y los medios de instruirle conforme a las leyes de su misma naturaleza; y la naturaleza de los diversos ramos de conocimientos y los medios de enseñanza en relación con las leyes de dicha naturaleza.

El que enseña bien, educa, y por fuerza empleará métodos adecuados, prácticos, efectivos: la inducción analítica, la intuición pedagógica, la mayéutica socrática, la eurística prodigiosa.

El que educa mal, tampoco enseñará nada, obligado a divagar por eriales muy apartados de los feraces campos de la verdadera cultura pedagógica, y apelará, para fingir progresos, para aparentar conquistas que tanto engañan a los incautos, al trabajo absurdo de las Danaides, a pretender llenar el tonel sin fondo de la memoria, trasegando, vertiendo, hacinando, por deducciones sistemáticas, síntesis mecánicas y detestables psitacismos, que momifican al niño y convierten los sagrados templos del saber en el suplicio de Aristófanes, en el Matadero de Almas de Ellen Key. "En la letra está la inmovilidad y la muerte; en el espíritu, la modificación continua y la vida."

Bien deslindadas esas funciones esenciales y complejas de la enseñanza, ¿cuál debería ser el fin primario y cuál el secundario de las altas escuelas de instrucción (high schools, secondary schools)?

Acomodándonos a lo más práctico y general, consideremos las cuatro etapas principales de la vida humana: el niño, el adolescente, el joven y el hombre.

Recordemos la adaptación y la reciprocidad maravillosa que existe entre la educación y la instrucción, entre el espíritu y la materia, entre la mente y las cosas que nos rodean, la vida práctica.

El buen maestro acerca esos términos, combina, identifica esos extremos; una enseñanza desorientada tiende inconscientemente a separarlos más y más; los hace antagónicos, los vuelve incompatibles.

Pues bien, y siguiendo la síntesis analítica de Baldwin, para el niño, que es todo actividad, y que requiere ponerse en contacto con el mundo objetivo, está la vida real, la vida infantil, el "kindergarten," la escuela elemental; para el adolescente, que necesita ciencia inmediatamente derivada de lo objetivo, está la escuela primaria, propiamente dicha; para el joven ávido de razones, de análisis, de filosofía, está el colegio, el "secondary school;" y para el hombre, que se lanza a la conquista de las altas demostraciones en el inmenso círculo de la ciencia, que busca el secreto de dominar las cosas y de dominarse a sí mismo, que necesita acción propia y el coronamiento de una profesión práctica, está la Universidad, las escuelas especiales, el gran escenario del mundo.

A todos estos grados o zonas de enseñanza, corresponde, como fin general, tanto la educación como la instrucción; pero con intensidad recíprocamente inversa: se empieza con el máximo de educación y el mínimo de instrucción, para finalizar inversamente en los lindes más apartados de la vida escolar, cuando el hombre digno ya y ennoblecido "trabaja en pro de la humanidad, por hacerla más sabia, mejor y más feliz."

Estableceremos, pues, en conclusión, que el fin primario de las altas escuelas de instrucción tendrá que ser la educación, ampliamente considerada, y el fin secundario, la instrucción pedagógicamente definida: tal es en suma el carácter que debe revestir esta enseñanza.

La educación, que envuelve, que implica la instrucción, será siempre el fin primario de todo grado de enseñanza, y la instrucción que no será positiva si no se supe dita a la educación, a la evolución psicofísica del hombre, tendrá que ocupar el segundo lugar, es decir, habrá de subordinarse, de incorporarse a la primera para resurgir al cabo, como de prodigioso laboratorio, potente y luminosa.

La instrucción presupone la educación como el árbol fructífero el suelo fecundo, como la sangre-vivificante el corazón que impulsa y que regula.

"Cuando se ha establecido" dice Baldwin, "el predominio de la razón, el entendimiento lucha por conocer las causas y efectos, los medios y fines, los principios y sistemas. En el colegio todos los asuntos se establecen desde el punto de vista filosófico, y entonces es cuando se alcanza la mayor cultura general."

La mayor suma de cultura educativa, lo repetimos, supone el mínimo de acumulación instructiva; porque el que comprende, y asimila, y domina, se siente robusto y fuerte, hábil y enérgico, sin confusiones, sin pesadumbres, sin los odiosos fardos tan donosamente ridiculizados por Julio Simón.

La educación bien entendida es el objeto primario, fundamental, de toda enseñanza; y la instrucción, como generalmente se practica, si no hay recursos para sustituirla ventajosamente, debería, por lo menos, ocupar lugar muy secundario en el programa de la cultura nacional.

Entre nosotros es de urgente necesidad revestir la segunda enseñanza, en la que se ha laborado bastante, de ciertos caracteres especiales, peculiares, nacionales, adaptarla a las exigencias de la época, del país, del ciudadano; a los progresos de la ciencia en general, y a las necesidades locales; a nuestro estado industrial, agrícola, comercial, etc.

Nuestros planes de estudios deberán tener como fin primario el desenvolvimiento armónico de todas las potencias y aptitudes del individuo, en el grado de intensidad correspondiente a cada sección, y al propio tiempo, como fin secundario, derivado, el habilitar al joven, mediante esa misma educación, para los fines ulteriores de la vida práctica, pues "la cultura completa es, incuestionablemente, la mejor preparación para la vida práctica, para la lucha por la existencia; y, recíprocamente, los conocimientos más importantes y valiosos para la vida práctica, resultan siempre los mejores elementos para la cultura."

Juan Jacobo Rousseau, con "su hombre en sí," en su famoso "Emilio," con su clásico discípulo, que debe ser el hombre perfecto, el hombre de la naturaleza, importándole poco todo lo demás, y Julio Lemaître, que quiere solamente, exclusivamente, formar el hombre de un país determinado, de una religión, de una profesión; estos grandes filósofos se han colocado en extremos opuestos, son dos antípodas en la esfera de la cultura humana, dos utopistas encerrados en las torres de sus quiméricas para-dojas, como observa Compayré; y la verdad, lo práctico, lo humano, sólo se encontrará en la conciliación de esos extremos; en la coalición de esas fuerzas opuestas; en la alianza de la más alta cultura con los conocimientos más prácticos, más provechosos para salir avante, victorioso, en los rudos combates de la vida.

Ambas operaciones, ambas culturas, son solidarias, integrales: la primera es la condición, la base, la causa eficiente y verdadera causa final de la segunda: fin primario y fin secundario.

¿Hasta qué punto deberán determinarse los cursos escolares en las altas escuelas de instrucción, por los requisitos de admisión al colegio, y hasta qué punto por las exigencias de la vida industrial y civil?

En el engranaje común de la enseñanza pública, en todas partes están perfectamente determinados los cursos escolares en consonancia con los requisitos de admisión estipulados; pero tratándose de fijar a priori, de investigar la determinación de cursos y requisitos de admisión en los colegios, haremos algunas observaciones.

Hay que tener en cuenta, para la solución de este problema, tres factores principales—los llamados criterios de clasificación: edad, disposición y conocimientos del alumno; la naturaleza y valor relativo, pedagógico, de los distintos ramos del saber humano, y las condiciones peculiares del país en que se vive y se legisla, relativamente a las exigencias de la vida industrial y civil.

Por punto general, los alumnos de más edad, como enseñan los buenos pedagogos, figurarán en clases o grados superiores; pero ante todo debe guiar el promedio, hábilmente obtenido del desarrollo físico, moral e intelectual del educando; los sanos y robustos irán antes que los endebles y enfermizos; los diligentes y despiertos antes que los reacios y tardíos; los que se instruyen y aprovechan antes que los atrasados e ignorantes.

"Los exámenes orales y por escrito, manifiestan algunas condiciones; pero el no hacer caso de la edad y disposiciones que tenga el niño, es no alcanzar la verdadera solución del problema."

Estos criterios y orientaciones para una acertada clasificación escolar, tendrán perfecta aplicación a las altas escuelas de instrucción, el día no lejano en que, convencidos los pueblos y los gobiernos de que la segunda enseñanza no debe constituir solamente una escala o preparación para los estudios facultativos, sino también complemento indispensable de la enseñanza primaria, se imparta esa enseñanza secundaria, amplia y gratuitamente, modificando profundamente su plan, sus programas y tendencias, al mayor número posible de individuos, a fin de formar buenos ciudadanos, cultos e instruidos, de criterio sano y miras elevadas.

La ciencia y la experiencia demuestran que sólo se alcanzará la perfecta cultura del hombre con la aplicación, al conjunto integral de sus facultades, y en un alto sentido pedagógico, de la suma de todos los conocimientos, ya sea por procedimientos estáticos o dinámicos, por la estatillegia de Laffore o la citolegia de Dupont.

Esto constituye el sistema integral, la enseñanza cíclica; esa como bola de nieve de Pestalozzi, imperceptible al principio, que aumenta sin cesar, y acaba por adquirir volumen considerable; esa antorcha de Comenio, que ha de iluminar los distintos grados de la enseñanza y los horizontes todos de la vida; ese círculo intensivo de Alcántara, que se ensancha gradualmente, desde la escuela de párvulos hasta la universidad.

Como tenemos la convicción, ya expresada, de que, si no totalmente, por imposibilidad material, al menos en escala relativa, hasta donde lo permitan los recursos y el patriotismo de cada país, deberá impartirse la enseñanza secundaria reformada, entre

la juventud que vive bajo regímenes de verdadera y bien entendida igualdad republicana, hay que fijar mucho la atención al organizar y reglamentar un colegio, una alta escuela de instrucción, en las condiciones de vida civil e industrial, para adaptar a las circunstancias resultantes, planes y programas, distribución del tiempo, extensión de las materias y demás métodos y procedimientos.

Así la segunda enseñanza sería un verdadero ideal; palestra donde se formarían ciudadanos muy útiles, y diestros agentes del progreso nacional; pues como dice Fichte, no puede haber regeneración nacional sin regeneración moral, ni ésta podría existir sin educación enérgica que se ocupe a la vez de todo el hombre y de todo el pueblo.

Se impone, pues, la necesidad de reformar la segunda enseñanza en el sentido indicado, o si se prefiere, de establecer escuelas complementarias, o altas escuelas especiales, como ya existen bastante perfeccionadas en diversos países, con toda la intensidad de la segunda enseñanza, pero de carácter decididamente práctico, destinadas exclusivamente a completar la cultura indispensable y común a todo hombre civilizado.

Los cursos se determinarían entonces, en su mayor o menor extensión, por las exigencias peculiares de la vida industrial y civil de cada localidad.

El número de años escolares, el número de cursos, se determina en razón inversa del monto del tiempo empleado en cada curso, de suerte que las ventajas de este sistema, el secreto del éxito, a este respecto, estribaría, en gran parte, en la puntual asistencia a dichos centros escolares; pero esta asistencia se vería garantizada, ya porque las horas lectivas corresponderían a las horas libres de trabajo industrial y de las ocupaciones de la vida civil, ya por el aliciente poderoso que nos arrastra hacia las fuentes de donde fluyen las fuerzas, de donde dimanan las virtudes que a la par que nos perfeccionan y enaltecen, nos aseguran el triunfo en las luchas de la vida.

En la legislación escolar de Nicaragua encontramos un decreto que determina el período del curso escolar, y la época de los exámenes, para los departamentos cafetaleros, en la enseñanza primaria, con este preámbulo, que parece inspirado en las disciplinas pedagógicas que sustentamos:

Considerando: Que algunos padres de familia se ven en la necesidad de trasladarse con sus hijos a las fincas de café, para la recolección de este grano, en los meses de diciembre a febrero, y estando obligados, por otra parte, a enviar a sus niños a las escuelas, con objeto de obviar esta dificultad, etc.

Estas tendencias, que asoman ya por todas partes, con aplicación a todos los grados de la enseñanza, repetidas, multiplicadas y bien dirigidas por pedagogos, filósofos y legisladores de recto criterio, llegarán al cabo a formar la gran corriente de la cultura completa, de la verdadera cultura humana.

RESUMEN.

No hay pueblo que, teniendo conciencia de sí mismo, no se preocupe por los grandes problemas de la enseñanza:

Unidad y universalidad de la segunda enseñanza.

Cómo se lucha por la reforma de esta enseñanza en Francia, Alemania, Inglaterra, en los Estados Unidos de la América del Norte y en la América Latina.

Concepto pedagógico sobre los problemas fundamentales de la enseñanza pública: Spencer, Platón, etc.

Deslindamiento detallado de los caracteres de la educación y de la instrucción, para buscar el fin primario y el secundario de las altas escuelas de instrucción.

Puntos de vista de este problema: Wickersham.

La instrucción es a la vez objeto, fin y medio de la educación.

Las etapas de la vida, y enseñanza correspondiente: Baldwin.

Caracteres especiales de una enseñanza nacional.

Sistemas opuestos y exclusivos de Juan Jacobo Rousseau y Jules Lemaitre.

Los factores principales para la determinación de los cursos escolares por los requisitos de admisión.

Criterios y orientaciones para una acertada clasificación escolar.

El sistema integral de la enseñanza: Pestalozzi, Comenio, Alcántara.

Organización de un colegio con referencia a la vida industrial y civil.

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¿DEBERÁN DEPENDER LAS UNIVERSIDADES Y COLEGIOS SOSTENIDOS POR FONDOS PÚBLICOS, DE PODERES INDEPENDIENTES O AUTÓNOMOS O DEBERÁN ESTAR DIRECTAMENTE BAJO EL DOMINIO CENTRAL DEL ESTADO?

Por RAFAEL CAÑEDO C.,

Rector de la Universidad de Cochabamba, Bolivia.

Las universidades son las corporaciones establecidas por legítima autoridad para la enseñanza pública y la concesión de diplomas y de títulos facultativos o profesionales.

Los colegios son los establecimientos creados por el Estado o autorizados por la universidad, para ejercerse en ellos la enseñanza.

La ciencia, como fórmula concreta de la verdad investigada por la inteligencia, no puede ostentar todo su poder y grandeza sino únicamente dentro de una atmósfera de amplia libertad, porque de lo contrario quedaría ella envilecida por la servidumbre. El Estado necesita de la ciencia para cumplir con su misión de garantizar la realización del derecho en el seno social, con la sola condición de dejarla en absoluta libertad para su enseñanza y sin pretender monopolizarla.

La necesidad de la enseñanza es indiscutible, porque constituido un estado social cualquiera, se impone la noción del deber y del derecho para todos los asociados, siendo la luz de la inteligencia, la que enciende la antorcha de la ciencia.

Si la enseñanza es una función necesaria del Estado, en cambio, no debe negarse a nadie el ejercicio de esa función tan importante, porque cuanto mayor es el número de las personas, que enseñan, mayor tiene que ser el campo de las verdades indagadas y de las inteligencias cultivadas.

Cuando el Estado ejerce el monopolio de la enseñanza, llega a pervertirse la noción de la verdad y muchos de los que saben y pueden enseñar se retraen, llegando a entabarse la generalización de las nuevas ideas brotadas de la inteligencia a impulsos de la ley evolutiva del progreso.

Cuando, por el contrario, la enseñanza es libre, se exponen y discuten todas las doctrinas, y la inteligencia humana nacida para investigar la verdad, no encuentra obstáculos para estudiarla, conocerla y difundirla.

Siendo la instrucción una verdadera institución social, más bien que una mera institución política: debe constituirse en el seno social una institución especial y autónoma, distinta del poder político y del poder municipal, para organizar las universidades y la enseñanza que se dé por el Estado, con fondos públicos, o por los particulares, con fondos del patrimonio privado.

Por consiguiente, las universidades y los colegios sostenidos por fondos públicos, deben depender de un poder independiente y autónomo de instrucción, creado por el Legislador, sin someterse directamente bajo el dominio central del Estado.

¿HASTA QUE PROPORCIÓN ES CONVENIENTE LA INSTRUCCIÓN MIXTA EN LAS ESCUELAS ELEMENTALES, ALTAS ESCUELAS, COLEGIOS Y UNIVERSIDADES?

Por FRANCISCO A. RÍSQUEZ,

Vicepresidente del Consejo Nacional de Instrucción, Venezuela.

Entendiendo en este caso por instrucción mixta la reunión de los dos sexos en las clases de un mismo establecimiento docente, contestamos la precedente pregunta como sigue.

El problema de la coeducación, o sea la mezcla de los dos sexos en los bancos de una misma escuela u otro establecimiento docente, ha sido motivo de grandes discusiones, sin que hasta hoy se haya logrado fijar el criterio para la resolución de tan importante asunto, desde el múltiple punto de vista económico, moral y social.

Para todos es indudable que, salvo los casos de enseñanzas que corresponden de modo especial a la mujer o al hombre, no hay por qué modificar los programas de las asignaturas en razón del sexo de los alumnos, sino acomodarlos a las exigencias o necesidades de la clase escolar, y que, por consiguiente, ni el sexo, ni aun la edad, ni el número, pueden ser factores del programa a cuyo desarrollo en cátedra pueden asistir alumnos de todo sexo.

Pero mientras para algunos pedagogos el hábito de mantener mezclados los individuos de uno y otro sexo en la camaradería de una escuela engendra el hábito también de una estima y un respeto mutuos, ahogando en germen la tendencia natural a buscar con ansia y curiosidad una compañía que aparece alejada o prohibida, como si fuese pecaminosa; para otros la mezcla de los dos sexos en la intimidad de las aulas, es una causa de deseos, un despertar de sentimientos y un acicate de tendencias que, no sólo se oponen a la tranquila ejecución del esfuerzo mental para el estudio, sino que dan facilidades para la posible realización de actos contrarios a las buenas costumbres, o a la pureza de sentimientos.

En Venezuela la opinión general es opuesta a la coeducación, o reunión de los dos sexos en unos mismos bancos o aulas, tanto que condenarla de un modo absoluto sería expresar el parecer público. Debemos, sin embargo, expresar el parecer individual de quien suscribe estas líneas.

Teniendo en cuenta las ventajas aducidas, al mismo tiempo que las acusaciones hechas a la mezcla de los sexos en la Escuela, y visto que en estos países de la zona ntertropical, y en estos pueblos de Sud América no hay la costumbre de la coeducación, hemos creído siempre que la reunión de los sexos puede permitirse en las Escuelas iprimarias hasta la edad de los 10 o los 12 años. Tal ha sido la opinión sostenida por el Consejo de Instrucción del Distrito Federal, que tuvo la honra de presidir, y el punto de partida de las disposiciones hoy consignadas en los reglamentos.

Como nuestras leyes fijan la edad de los 7 años para entrar en la escuela, y cuatro grados, casi equivalentes a 4 años para la instrucción primaria elemental y obligatoria, resulta que los tres primeros grados de la escuela primaria, y para los alumnos pre-

coces, hasta el cuarto grado, pueden ser concurridos indiferentemente por niños y por niñas, así como el Magisterio para los tres primeros grados, y a veces hasta para el cuarto, puede ser servido y aun debe serlo, preferentemente por mujeres. El cuarto grado, la edad de los 10 a los 12 años marcaría la separación de los alumnos y de los maestros, según su sexo.

Queda dicho con lo anterior que, en concepto nuestro, la escuela primaria superior, o sea los dos últimos grados, deben presentar una completa separación de sexos en maestros y en alumnos.

Al tratarse de la instrucción secundaria, lo que corresponde a las altas escuelas, o gimnasios, o liceos, o colegios, la separación se impone, como para los dos últimos grados de la primaria. En Venezuela tenemos colegios separados para varones y para niñas.

Al llegar a los estudios superiores o universidades, las cosas vuelven a cambiar por razones de otro orden.

En Venezuela, país que tenemos en cuenta para estas apreciaciones, son muy raras, excepcionales las mujeres que se dedican a estudios universitarios, y no sólo sería exageradamente costoso para nuestro presupuesto de instrucción pública, sino además, de una inutilidad resaltante, el fundar cátedras separadas para uno y otro sexo. En las universidades, por tanto, en los estudios superiores, las clases mixtas son una necesidad y debe permitirse el ingreso de alumnos de ambos sexos a sus aulas, como se ha estado haciendo en Venezuela.

La instrucción especial es otra cosa. Las especialidades varían con los sexos, y la práctica de Venezuela enseña que se puede tener escuelas especiales de artes, oficios e industrias en establecimientos separados, para mujeres y para hombres. Esto no impide que para algunas materias, como ocurre en la Academia de Bellas Artes y en el Conservatorio, asistan a sus clases alumnos de ambos sexos, lo cual es por sí sólo un argumento en favor de la coeducación tan combatida por espíritus asustadizos. En tales casos, la asistencia mixta es una imposición de la necesidad.

LA COEDUCACIÓN EN LA ESCUELA NORMAL DE SUCRE.

Por EMILIO JACOBS,

Director de la Escuela Normal de Sucre, Bolivia.

En un folleto publicado en Bruselas, en 1913, y titulado "La Escuela Normal de Sucre," M. G. Rouma, fundador de dicha escuela y entonces director general de enseñanza en Bolivia, hablando de la coeducación de los sexos en este establecimiento, decía lo siguiente:

La coeducación de los sexos ha sido instalada en la Escuela Normal de Sucre desde el principio de 1910. Ella fué tolerada por el Gobierno, pero no reconocida oficialmente y el director tomó solo la responsabilidad de este ensayo. La población era hostil a la tentativa, pero el personal de la escuela y cierto número de amigos se adhirieron con entusiasmo a la idea y trabajaron bastante por su buen resultado.

Durante los primeros días, reinó en el establecimiento, cierta incomodidad, cierto malestar, fáciles de comprender: las niñas se mantenían unidas entre sí, los jóvenes hacían lo mismo y entre éstos se cambiaban a propósito de las señoritas, chanzas y críticas en cierto modo malévolas. Este estado de espíritu se dispó pronto por la intervención del director, que reunió a los alumnos y les habló de la coeducación que está basada sobre la idea de familia. Les hizo ver cuánto había ganado la escuela desde la entrada del elemento nuevo, cuán completa estaba y cómo era más verdadera desde el punto de vista humano, que quiere que los dos sexos vivan juntos en la sociedad, y lo animada, cordial y verdaderamente familiar que sería después la escuela.

Mostró a los jóvenes cuál era su deber de alta y fraternal solidaridad; mostró también que ellas eran dignas de admiración, de respeto y de cariño por haber sido las primeras que se atrevieron a desdefiar muchos prejuicios para entrar a la Escuela de los jóvenes y buscar allí el saber, aportando de este modo su colaboración a la gran obra de progreso que la Normal tenía que cumplir.

El discurso tuvo un magnífico resultado; los trabajos en común, la unificación gradual de las aspiraciones, las fiestas escolares se encargaron de lo demás, y al cabo de algunos meses unía a ambos grupos la más franca y cordial simpatía. Fuera de los cursos de gimnasia, de trabajos manuales y de economía doméstica, todos los cursos, lo mismo que los recreos, son comunes. En los laboratorios y clases los alumnos no están indicados por sexos; en general, eligen el sitio que les conviene y se colocan al lado de cualquiera de sus compañeros o compañeras.

No se ejerce vigilancia inquisitorial y la idea que se trata de hacer penetrar en el corazón de cada alumno, es que se tiene confianza en él y que la primera condición para justificar el honor de pertenecer a la Escuela Normal es la de tener un profundo respeto de sí mismo, de su dignidad y de su honor; este sentimiento arrastra naturalmente el respeto a los demás.

La coeducación funciona ahora desde hace tres años sin ninguna restricción. No ha sido reconocida oficialmente sino en 1912, habiendo sido consideradas las normalistas hasta entonces como simples "oyentes."

Un decreto ministerial, publicado en 1911, les concedió todos los derechos y ventajas de que gozan los varones:

Los resultados de la coeducación son completamente favorables y cada día me regocijo de haberla introducido en la Escuela Normal.

Respecto a la influencia ejercida por la coeducación en la escuela, he aquí lo que he comprobado: desde el punto de vista del trabajo intelectual, el ejemplo de la aplicación sostenida, manifestada por las niñas, ha sido saludable para excitar el celo de los jóvenes; algunos normalistas, notoriamente conocidos como perezosos o negligentes, se han corregido por sí de estos defectos y han llegado a ser excelentes alumnos por la sola presencia de las niñas; es insostenible para un adolescente ser censurado delante de señoritas y este sentimiento diestramente manejado ha sido poderoso para dar hábitos de orden y de trabajo.

Desde el punto de vista social, he visto con placer extinguirse poco a poco la desconfianza, el sentimiento de fastidio y de timidez que marcaron el principio de las tentativas de fraternización de las señoritas y de los jóvenes. Se ha establecido una franca cordialidad, ha crecido por las preocupaciones e intereses idénticos y por el cambio de pequeños sericios.

En los adolescentes se desarrolla, con la pubertad, un sentimiento especial que hace ver al otro sexo en el marco de una especie de idealización misteriosa, extrañamente favorecida por las lecturas y por el conjunto de las precauciones tomadas por las madres, los curas y los educadores para aislar a los sexos.

He podido darme cuenta de que la educación en común ha combatido eficazmente y de la manera más natural este sentimiento de malestar romántico. Viendo en común, los jóvenes y señoritas han aprendido a conocerse y a apreciarse en su justo valor.

Añadiré que la sola presencia de señoritas en un establecimiento normal ha hecho a los jóvenes más sociables: han perdido su violencia, y han ganado en cortesía, en actitudes y en respeto de sus personas.

Por su parte, las niñas han obtenido un beneficio notable de la coeducación: han ganado en ánimo, en independencia y han perdido su timidez y su frialdad.

Dos años consagrados enteramente a la Escuela Normal de Sucre, en mi calidad de director del establecimiento, me autorizan a adherirme completamente a las ideas expresadas por M. Rouma. He llegado a Bolivia, penetrado de la eficacia del sistema coeducativo y me he convertido después en su partidario profundamente convencido.

En el Primer Congreso Internacional de Pedagogía, reunido en Bruselas en 1911, M. Rouma presentó un informe sobre el ensayo de coeducación realizado en su escuela. Este informe fué discutido por las eminencias pedagógicas belgas y extranjeras y el ensayo emprendido en Bolivia fué considerado como una experiencia definitiva.

Ella ha continuado con más entusiasmo bajo mi dirección desde el año 1914, y después de este período de dos años de contacto diario con la población mixta del establecimiento y de observación atenta, creo poder formular en el presente trabajo una serie de notas propias para constituir elementos de resolución del discutido y complejo problema de la coeducación de los sexos.

El primer argumento presentado contra este sistema es el del clima y el temperamento nacional. Se ha pretendido que la coeducación no es posible sino bajo ciertas latitudes y para ciertos temperamentos. La experiencia emprendida en Sucre desde 1910 y continuada hasta el presente, viene a destruir esta afirmación. Sucre goza de un clima cálido, uniforme, que obra fuertemente sobre el sistema nervioso. Estas condiciones de clima, de medio y de temperamentos no han infundido en nada sobre las relaciones de jóvenes y señoritas.

El factor moral es de una importancia capital. Ha sido realizado en Sucre en condiciones excelentes, gracias a sacrificios financieros que han permitido el arreglo de locales apropiados y conformes con las exigencias de la pedagogía moderna, la elección de un personal convencido, capaz y digno de confianza, la elaboración de un conjunto de reglas tendientes a organizar la vida escolar sobre bases destinadas a dar a los alumnos el amplio uso de la libertad, y haciendo al mismo tiempo un llamamiento a sus sentimientos de dignidad y de responsabilidad.

Las observaciones recogidas en el curso de los dos años de mi dirección en la Escuela y la experiencia adquirida en este período, me han demostrado que una de las condiciones primordiales de éxito, en una tentativa de coeducación, reside en la elección del personal docente. Este debe primeramente reunir cualidades morales de primer orden: noción estricta del deber, dignidad, tacto, reserva, cualidades todas que le permitirán abordar a los alumnos sin otro estado de alma que el del educador penetrado de la grandeza de su misión y asegurar en la juventud la influencia de su inteligencia y su corazón.

Otro requisito indispensable es la convicción. Es preciso que el profesorado de una escuela mixta sepa que trabaja en un terreno capaz de producir, pero cuya cosecha depende de los procedimientos empleados, siempre sugeridos por un estudio atento del medio y de las circunstancias actuantes y que la clarividencia y perspicacia del educador podrán analizar para arrancar de ellas las conclusiones oportunas. Estas cualidades no pueden adquirirse sino por una persona penetrada del valor educativo del sistema en el cual trabaja. Me adhiero por completo a la idea de K. E. Palmgren, uno de los apóstoles de la coeducación en Europa: "Para que una escuela que adopta el sistema coeducativo triunfe, es necesario absolutamente que ella sea dirigida por profesores que creen en él y que comprendiendo su deber, se apliquen a instruir el espíritu de los alumnos, pero sobre todo a desarrollar su corazón."

En cuanto al elemento régimen físico, tiene gran importancia desde el punto de vista de la señorita, sobre todo en un establecimiento mixto.

No me detendré en consideraciones sobre la influencia moral del régimen físico, cuya importancia no puede escapar al educador. Examino únicamente la influencia del régimen físico sobre el trabajo escolar y creo que si la niña no presenta frente a los estudios un estado de inferioridad respecto al joven, su organismo, en cambio, se encuentra en condiciones que necesitan un conjunto de precauciones destinadas a permitirle el esfuerzo regular durante el año escolar y especialmente en los períodos críticos mensuales. Un régimen físico, cuidadosamente estudiado, se impone pues en un establecimiento que reúne a los dos sexos, si se quiere no hacerla sucumbir en sus estudios.

En la Escuela Normal de Sucre, hemos acordado un cuidado particular a la organización del Internado de señoritas, a la de los cursos de educación física, de juegos al aire libre, de ejercicios, de duchas, a la formación de horarios, a la comprensión de los exámenes, etc. Y hemos llegado al resultado de que la señorita prosigue sus estudios con sus condiscípulos masculinos, sin perturbación ni alteración de su salud física y moral.

El cuadro siguiente indica, para los años 1914 y 1915, el número medio de inasistencias por alumno y por sexo. Él demuestra que la asistencia escolar es casi la misma para los jóvenes y las señoritas y que éstas resisten perfectamente los estudios fuertes y sostenidos que les son impuestos:

Año 1914: *Término medio de faltas por alumno*, 7; *niñas*, 3½; *jóvenes*, 3½; año 1915: *Término medio de faltas por alumno*, 8; *niñas*, 4½; *jóvenes*, 3½.

En cuanto a los alumnos enfermos, la división se establece así:

Año 1914: *Número de alumnos enfermos*, 48; *niñas*, 23; *jóvenes*, 25; año 1915: *Número de alumnos enfermos*, 50; *niñas*, 28; *jóvenes*, 22.

La señorita no sufre, pues, ningún perjuicio físico sin embargo de que se exige de ella el mismo esfuerzo intelectual que del joven y de que se halla sometida al mismo régimen escolar que éste. Pero yo sé que se ha hecho observar que si la coeducación no acarrea siempre consecuencias funestas para la salud física de la señorita, el peligro puede ser grande cuando el esfuerzo cerebral impuesto a ella se acentúa en la época crítica, desprendiéndose de ahí todas las miserias fisiológicas de la mujer, desarrolladas por una higiene deplorable. Desde este punto de vista no tememos nada, gracias al conjunto de medidas higiénicas y pedagógicas que se han tomado para asegurar el trabajo de nuestras alumnas en condiciones tales que en ningún momento puede alterarse su salud y perturbarse sus funciones particulares. Es cierto por otra parte que nuestras alumnas entran a la Escuela a la edad de 16 años, en que la pubertad es un hecho completamente cumplido en la niña boliviana. Pero, hemos podido comprobar que generalmente las normalistas se conservan mejor que la mayoría de las señoritas de la clase media y la alta sociedad sucrense, que llevan una vida más sedentaria y más alejada de las preocupaciones de educación física.

Un último argumento contra la coeducación, que desearía refutar, es el de la pretendida inferioridad de las mujeres. Indudablemente, el estudio fisiológico y el del desarrollo físico de los dos sexos nos da indicaciones relativas a la naturaleza diferente de su organismo y de algunas de sus funciones y aptitudes, pero estimamos nosotros que mediante las precauciones que hemos señalado ya, nada se opone a que sea aplicado a ambos sexos el mismo régimen escolar. Se ha pretendido que los métodos de educación deben diferir, según se apliquen al varón o a la mujer. Creemos que esto no es verdad sino para la educación física que, si quiere ir conforme con las tendencias científicas modernas, debe necesariamente tener en cuenta las diferencias de organización, de funciones, de aptitudes y de destinos, y que valiéndonos de los cuidados que deben rodear toda sana pedagogía, la coeducación puede emprenderse sin temor de accidentes ni fracasos.

En ningún momento he podido comprobar que las niñas sean inferiores a los varones, intelectualmente. En la Escuela Normal de Sucre, todos los cursos, excepto los de educación física práctica (gimnasia), trabajos manuales y economía doméstica, se dan al conjunto de los alumnos. Ningún profesor ha podido jamás establecer diferencias notables en ningún ramo, desde el punto de vista de las facilidades de asimilación de materias, entre uno y otro sexo.

Me basta, por otra parte, presentar en el cuadro siguiente el tanto por ciento de los puntos obtenidos en los últimos exámenes de salida (cuarto año) por cada uno de los sexos en los ramos llamados intelectuales:

Examen de salida de 1915.

Ramos.	Término medio de puntos obtenidos sobre 100.	
	Niñas.	Jóvenes.
Moral.....	74.8	76.7
Pedagogía.....	76.5	79.8
Idioma nacional.....	76.0	74.8
Matemáticas.....	83.3	81.1
Ciencias naturales.....	78.1	82.8
Historia general y nacional.....	79.7	84.4
Geografía general y nacional.....	81.9	83.0

Además, este otro cuadro indica el tanto por ciento de los puntos obtenidos, por cada sexo, en el conjunto de exámenes de fin de año:

Cursos, 1915.	Porcentaje de puntos obtenidos.	
	Niñas.	Jóvenes.
Primer año.....	82.9	87.3
Segundo año.....	81.0	87.2
Tercer año.....	77.6	77.1
Cuarto año (salida).....	82.3	82.1
Conjunto de los 4 cursos.....	80.9	83.4

Resulta de estos datos que la señorita no es, de manera absoluta, inferior intelectualmente al varón, que ella no experimenta, en general, más dificultades que éste para asimilarse los programas.

De otro lado, hemos demostrado que desde el punto de vista de su salud presente y de su destino como mujer, nada se opone a que la niña siga la misma enseñanza que el varón y sea sometida a las mismas exigencias de horarios, de disciplina intelectual, de régimen educativo, etc.

En estas condiciones, considerando las mismas ventajas morales y sociales que resultan de la coeducación, estimamos que este sistema puede ser implantado en cualquier parte donde se encuentren los medios favorables a su desarrollo normal.

¿EN QUÉ PROPORCIÓN ES CONVENIENTE LA INSTRUCCIÓN MIXTA EN LAS ESCUELAS ELEMENTALES, ALTAS ESCUELAS, COLEGIOS Y UNIVERSIDADES?

Por FRANCISCO BUITRAGO DÍAZ,

Managua, Nicaragua.

El problema que entraña la enseñanza mixta ha sido en todos los tiempos de la Historia, el buscar un medio de resolver, cómo pueden aprovecharse los beneficios de una educación en común de individuos de ambos sexos, orillando los peligros que trae consigo la convivencia y continua comunicación de ellos.

Tal medio varía según el grado de adelanto moral del país en que el problema se plantee; adelanto que traducido en un mayor respeto a la ley y a las buenas costumbres, disciplina los impulsos de la voluntad en los individuos y evita los desbordamientos pasionales. Otros de los grandes factores del problema, son: el factor del atavismo en las razas y el de las influencias climatéricas.

En resumen, se puede asegurar, que los datos que deben tomarse en cuenta para resolver desde el punto de vista sociológico la proposición que nos ocupa, son todos de carácter étnico.

Ninguno de ellos es óbice para que de una vez se considere como totalmente desprovista de peligros la concurrencia de niños de ambos sexos menores de siete años a las escuelas elementales en cualquier país del mundo. Pero de esa edad en adelante el factor étnico toma en el problema de la enseñanza mixta una importancia preponderante.

La influencia del atavismo y del clima, según sea mayor o menor, debe ser contrarrestada con una mayor o menor energía y efectividad de la ley, con una mayor o menor educación y disciplina del carácter. En los pueblos donde ese equilibrio no pueda mantenerse de una manera invariable, la enseñanza mixta sería un fracaso.

Es cosa averiguada que los individuos pertenecientes a las razas setentrionales son menos inclinados a los placeres eróticos que los descendientes de orientales y meridionales. Tampoco puede ponerse en duda que los climas tórridos despiertan en los

individuos y, al fin en las razas, tendencias marcadamente afrodisiacas; mientras que los otros climas son tanto más sedativos cuanto más fríos.

Estos dos factores convergiendo en ciertas nacionalidades como las indolatinas por su extremo más pasional, determinan en los niños una aparición más precoz y más intensa de los instintos sexuales. Tales instintos son tardíos y débiles en los individuos habitantes de las zonas templadas y pueden ellos ser mucho más fácilmente contrarrestados por el influjo de la educación y el respeto a la ley.

Es natural pues, que la tarea impuesta al maestro para contener el desarrollo de las pasiones en los estudiantes de los países intertropicales sea mucho más ardua que la de sus colegas del Norte.

Por de pronto podemos asegurar que el sistema del internado en la enseñanza mixta tiene que ser descartado sin necesidad de discusión. Aun en los países europeos más civilizados, la vigilancia más exquisita, es a veces impotente para suprimir de una manera absoluta ciertas prácticas y uniones secretas entre los educandos del mismo sexo en los colegios que pasan por ser los mejores.

La enseñanza en común y bajo el sistema del externado en los países del Norte que caminan a la vanguardia de la civilización no ofrece por el contrario ningún peligro. El candor de la niñez desaparece allí paulatinamente hasta muy tarde por razón del clima y del atavismo.

Además, en esos países generalmente la ley reprime pronta y eficazmente los actos contra el pudor; y la costumbre de acatarla, que es casi orgánica en sus habitantes, ha establecido un respeto profundo de los individuos de un sexo hacia los del otro. Ese respeto mutuo, una imaginación menos impresionable y un sistema nervioso menos propenso al sensualismo reducen considerablemente la suma de probalidades de que la enseñanza mixta sea un peligro para la moralidad pública y la tranquilidad de las familias en aquellas naciones.

Debe tomarse en cuenta además allí la mayor ilustración relativa de la mujer; la que tiene allí el hábito de representar un papel más importante en su propia lucha por la vida. La resistencia femenina a las asechanzas del vicio es allí mucho más intensa.

De los argumentos de esta disertación se desprende sin dificultad que en los pueblos cultos de las zonas templadas la enseñanza mixta es de gran utilidad y puede, sin inconveniente alguno, practicarse en todos los grados de la instrucción, aún en las universidades.

El lugar que la mujer ocupa en Hispano-América por ejemplo, como entidad sociológica, es muy diferente. Recluida por tradición y por costumbre en el interior de los hogares, alejada de la lucha diaria de la vida, bajo la protección de los individuos varones de la familia, la instrucción que recibe y sobre todo la que se relaciona con el lado práctico, es muy deficiente.

Colocada entonces la mujer en un contacto demasiado frecuente con individuos del sexo opuesto, que por lo general son en estos países de una moralidad dudosa en esta materia, la vigilancia y disciplina deficientes de los planteles de enseñanza, les serían indudablemente fatales.

Puede asegurarse pues, que por lo menos en los países hispano-americanos menos adelantados en el camino de la civilización, debe rechazarse como consagrado de antemano al fracaso cualquier intento actual de enseñanza mixta en cualquier grado de la instrucción que no sea el elemental.

Sin embargo, algunos ensayos aislados, con buen éxito, se han llevado a cabo, sobre todo en la enseñanza universitaria, en México, la Argentina, Chile y Costa Rica; pero el ejemplo ha cundido poco y es probable que durante muchos años más no se convierta en una regla general.

El corto tiempo de que dispongo para el desarrollo de este importante tema me ha obligado a tratarlo a grandes rasgos, sentando como consecuencia general que la enseñanza mixta en el continente americano sólo es posible en los Estados Unidos y en algunos raros puntos de Hispano-América, tratándose de grados de enseñanza superiores al elemental. El progreso lento de la educación del carácter puede hacerla posible en los otros países indolatinos en un futuro bastante lejano.

DAS ESCOLAS PROFISSIONAES—PERMUTA DE PROFESSORES E ALUMNOS.

Por REYNALDO PORCHAT,

Professor da Faculdade de Direito de São Paulo, Brasil.

É condição de progresso das nações o preparar cidadãos uteis para o aproveitamento dos seus productos.

Guardar um territorio por numeroso exercito ou inexpugnável frota, não basta para assignalar a importância de um paiz.

Como em todos os organismos, ha também na ordem social, um elemento superior e nobre que deve ser cuidadosamente tratado para constituir-se o traço característico da civilização de um povo.

Além das manifestações de sua força, nunca para a conquista, mas sempre para a defesa, necessitam também os povos mostrar as suas qualidades praticas de homens de acção, assenhoreando-se das novas ideias e das descobertas scientificas para elaborarem productos necessarios ou uteis ou mesmo agradaveis á humanidade.

A guerra é um tufão crudelissimo que passa, como passam as desgraças, embora deixando um amontoado de males irreparaveis e uma nuvem de pessimismo nos espiritos.

A lucta que não passa, que permanece sempre e cada vez mais accessa, é aquella que contribue, não para o exterminio, mas para o melhoramento do homem e das raças; é a lucta incruenta, constante e tenaz, mantida a golpes de productos; é a lucta industrial em que os adversarios tiram uns dos outros o maximo proveito em vez de se aniquilarem como feras.

Para essa lucta, em que estão empenhadas as nações mais importantes do mundo, têm ellas tido especial cuidado em formar o seu grande exercito economico, cujas fileiras são constituídas por profissionaes da industria, do commercio e da agricultura, que são hoje incontestavelmente os representantes do valor real dos povos. Estes brilham pelas ideias, ennobrecem-se pelo sentimento, resplendem pelas conquistas scientificas, mas vencem pela producção industrial que um commercio intelligente espalha por toda a parte.

Diz Gréard, o eminente reitor da Academia de Paris:

A uma sociedade que descansou encerrada nos limites traçados pela natureza, não conhecendo, nem praticando com as nações vizinhas, outras permutas que não fossem de ideias, succedeu uma sociedade de negocios expansiva, sollicitada de toda a parte pelos interesses do commercio e da industria, com o dever não só de sustentar o fulgor de sua grandeza hereditaria pela propaganda litteraria ou scientifica, mas também de entrar nos mercados do mundo para o desenvolvimento de sua riqueza material, que é a sua propria vida.

Á conquista terrível creada pelas primitivas condições da actividade guerreira, segue-se hoje a conquista dos mercados do mundo, determinada pela acção pacifica da actividade industrial.

E é por isso que o lemma das nações mais eminentes é alargar o circulo de sua influencia industrial, o que tem produzido, nos ultimos tempos, o desenvolvimento assombroso do commercio exterior.

Para esse vasto torneio industrial tem sido necessario educar os soldados da paz, abrindo-se para isso as escolas profissionaes, onde os moços e as moças se aparelham com o conhecimento da sciencia applicada, e de onde saem apercebidos para o nobre combate, auferindo vantagens para si proprios e ganhando honrosa posição para a sua patria.

Pode-se affirmar mesmo, com a autoridade de Astier e Cuminal, que "a organização do ensino technico está intimamente ligada á prosperidade commercial e industrial de cada nação."

Olhe-se para a Allemanha, Austria, Suissa, Belgica e os Estados-Unidos da America do Norte, povos de larga visão prática, pioneiros dessa grandiosa cruzada. Observe-se

a Inglaterra, que, ao sentir o passo marcialmente disciplinado de sua rival teutonica pelas explanadas da industria, avançando com segurança de posto em posto, sentiu a necessidade de preparar os seus homens do futuro, e tratou com interesse da instrucção profissional. Na França o problema está actualmente em ordem do dia, e os mais notaveis estadistas, como denodados campeões, se esforçam por aperfeiçoar as leis relativas ao ensino profissional, que já se cultiva nas mais importantes cidades como Bordeaux, Lyon, Marseille, Grenoble, e que já conta bons estabelecimentos mantidos pela municipalidade de Paris.

Deste lado da America o exemplo da Europa e dos Estados Unidos já tem produzido alguns fructos. E na Republica Argentina, Buenos Aires, sempre vigilante a todas as conquistas industriaes e scientificas, prompta a receber e assimilar os bons ensinamentos, infatigavel nas emprezas de real progresso, já ostenta, com verdadeiro esplendor, estabelecimentos de primeira ordem, onde o ensino technico floresce em installações sumptuosas surprehendendo aos visitantes. Em seu relatorio de 1912, o competente Prof. Aprigio de Almeida Gonzaga traduziu sinceramente a notavel impressão que lhe causou o estado admiravel do ensino nessa formosa capital, pondo em destaque o valor dos tres grandes estabelecimentos—Escola Industrial da Nação, Sociedade de Educação Industrial e a Escola Profissional dos Salesianos. No Brasil tambem já está reconhecida e proclamada a necessidade das escolas profissionaes, e o Governo Federal as vai creando e localisando em varios pontos da Republica.

O Estado de S. Paulo, a que se refere particularmente esta breve memoria, não se deixou ficar atrás em relação a problema tão palpitante. Sempre pacifico e firme em seus movimentos politicos, sempre progressivo em tudo quanto diz respeito á sua riqueza material, não hesita em despende com a instrucção do seu povo, quer se trate da instrucção primaria—cujos estabelecimentos são modelares em todo o paiz—quer se trate da instrucção geral secundaria e superior, quer se trate da profissional.

Quanto a esta ultima, não se pode registrar ainda um desenvolvimento de accordo com as exigencias da actualidade.

Foi a lei do Congresso do Estado, No. 1214 de 24 de Outubro de 1910 que autorizou o Poder Executivo a abrir credito para o estabelecimento de dois institutos de educação profissional, um para o sexo masculino e outro para o sexo feminino, na capital do Estado.

De accordo com essa autorização, o Poder Executivo, sob a presidencia do Dr. Albuquerque Lins, sendo secretario do interior o Dr. Carlos Guimarães, publicou o Regulamento das Escolas Profissionaes da Capital de S. Paulo, que baixou com o Decreto No. 2118-B de 28 de Setembro de 1911.

Dando execução a esse Regulamento, organizou o Governo os dois institutos que hoje funcionam normalmente no bairro do Braz, montados por dois distinctos professores que, em viagem ao estrangeiro, fizeram estudos especiaes do assumpto.

A Escola Profissional Feminina tem por fim ministrar o ensino de artes e officios, economia domestica e prendas manuaes nas officinas creadas pelo Estado, tendo o respectivo curso um cunho essencialmente pratico.

É muito modesta esta escola, tendo apenas as installações sufficientes para o funcionamento regular dos cursos. Mas o que falta em luxo e ostentação, sobeja em dedicacção por parte das professoras e em entusiasmo e esforço por parte das alumnas.

O ensino é dividido ahi em quatro cursos: o de confecções, o de roupas brancas, o de rendas e bordados e o de flores e chapéos, não tendo sido ainda posto em pratica o curso de arte culinaria e economia domestica, creado tambem pelo regulamento acima referido.

A Escola Profissional Masculina tem por fim ministrar o ensino das artes e officios, acompanhado sempre de demonstrações, e com um cunho pratico.

Mais bem montada do que a feminina, acha-se esta escola regularmente accomodada em grande edificio, onde ha espaço e condições sufficientes para o seu funcionamento provisorio. O horizonte do ensino é ahi muito mais amplo: são rapazes

que mourejam no atelier, na officina, na forja, combinando tintas, torneando madeiras, malhando o ferro, fundindo o bronze. É bello contemplar-se esse batalhão de jovens trabalhadores: bracejam com vigor sobre a bigorna, estuam ao clarão das fornalhas, e sorriem contentes e animados. Seu director, dedicadissimo e esforçado, não pode occultar o nobre orgulho de commandar tão disciplinado e esperançoso exercito da paz.

O ensino é dividido em varios cursos: o de desenho em geral e o de desenho profissional; o de mecanicos, ferreiros, fundidores, e ajustadores, o de pintores, o de pedreiros, o de carpinteiros e marceneiros, latoeiros, tecelões, esculptores, e o de chauffeurs, achando-se bem montadas as respectivas officinas e *ateliers*.

Nesta escola já está creada, produzindo os melhores resultados, a benefica instituição da "sopa escolar," elemento de primeira ordem para a saude e vigor dos estudantes, preconizado em todo o mundo culto.

Ainda com o mesmo escopo, e dando execução ao disposto no art. 46 da lei 1245 de 30 de Dezembro de 1910, creou o Governo duas escolas de artes e officios a alumnos do sexo masculino, tendo sido localizadas uma na cidade do Amparo e outra na cidade de Jacarehy, de conformidade com o regulamento que baixou com o Decreto No. 2118-A de 28 de Setembro de 1911; aquella destinada a formar electricistas, pintores, carpinteiros, marceneiros, correiros, ferreiros e mecanicos; esta destinada a formar carpinteiros, marceneiros, tecelões e segeiros.

Além dessas, mantém ainda o Governo cursos de ensino profissional annexos ao Instituto Disciplinar e ao Instituto Correccional. O primeiro, estabelecido na capital do Estado, de accordo com o regulamento que baixou com o Decreto No. 1079 de 30 de Dezembro de 1902, funciona com grande regularidade, produzindo os melhores resultados. Foi creado para o fim de corrigir e regenerar os menores delinquentes, viciosos ou abandonados, incutindo-lhes habitos de trabalho, dando-lhes educação, instrução litteraria e profissional. Na instrução profissional é ministrado de preferencia o ensino agricola, empregando-se os alumnos na horticultura, na floricultura, na arboricultura, na pecuaria, na criação de aves domesticas e outros trabalhos congeneres. Existem ahi as officinas necessarias para o ensino das artes e officios.

O segundo, remodelado de accordo com o regulamento que baixou com o Decreto No. 2552 de 2 de Março de 1915, é actualmente estabelecido na cidade de Taubaté, tendo por fim corrigir pelo trabalho os individuos nelle internados depois de condemnados como vadios ou capoeiras.

Ahi tambem se ministra o ensino profissional, estando já em prática a secção correspondente á agricultura.

Dentre os institutos de ensino profissional do Estado, destaca-se, pela sua importancia, a Escola Agricola Luiz de Queiroz, projectada pela iniciativa particular do benemerito paulista Dr. Luiz de Souza Queiroz, que doou ao Governo o grande terreno na cidade de Piracicaba, onde se erigiu o bello edificio que lá se ostenta. Inaugurada solememente no dia 14 de Maio de 1907, essa escola rasgou horizontes novos ao ensino profissional agricola entre nós, patenteando as vantagens do methodo experimental e demonstrativo. Os seus gabinetes e laboratorios de physica, mineralogia, geologia, chimica, botanica, agronomia, zoologia, entomologia, zootecnia, veterinaria; a sua fazenda modelo com campos de experiencias e demonstrações, cafezal, pomar, hortas, parques e mattas; as suas officinas de mecanica, de carpintaria; suas galerias de machinas e motores agricolas; o seu posto meteorologico, o seu museu, a sua bibliotheca, o seu apiario; todos esses elementos de um ensino racional e práctico têm sido criteriosamente aproveitados patenteando os admiraveis resultados da applicação da sciencia á industria agricola e pastoril.

Seguindo a mesma orientação scientifica applicada á agricultura, com a observancia dos modernos methodos, funcionam o Instituto Agronomico de Campinas, onde a cultura technica tem offerecido os mais proveitosos ensinamentos; o Horto Tropical de Ubatuba, que lentamente se desenvolve; e os dois aprendizados agricolas "Jorge

Tibiricá” e “Bernardino de Campos” que, impropriamente localizados em zonas do littoral, têm já manifestado vantajosos resultados.

Em complemento ao ensino instituido nas escolas, creou o Governo do Estado o Ensino Agricola Ambulante, que, ministrado pelos inspectores agricolas, ha cerca de cinco annos, muito tem aproveitado aos pequenos lavradores, chacareiros e colonos, tendo tambem contribuido para o desenvolvimento do cooperativismo e mutualismo agricolas.

Ao lado dos institutos creados pelo Governo, a iniciativa particular, cada vez mais revigorada no Estado de S. Paulo, mantém outros estabelecimentos de ensino profissional dignos de nota, como o Lyceu de Artes e Officios de S. Paulo, o Lyceu dos Padres Salesianos, o Instituto D. Anna Rosa, o Instituto Escolastica Rosa, de Santos, e as escolas agricolas municipaes de Araras, de Campinas, de Lorena, etc.

Realceu notar que, em alguns desses estabelecimentos, occupando o primeiro logar o Lyceu de Artes e Officios de S. Paulo, o ensino dispensado tem conseguido esplendidos resultados, sahindo de suas officinas productos que emparelham, em perfeição, com os dos melhores industriaes estrangeiros.

Para deixar menos imperfeita a rapida exposição que vimos traçando, cumpre consignar tambem (porque existem no territorio do Estado), as duas Escolas de Aprendizizes Artifices creadas pelo Governo Federal.

Tudo isso demonstra o esforço conjugado da acção do Estado e da iniciativa particular, patenteando a convicção de que o ensino profissional é uma necessidade reconhecida e proclamada.

Mas não basta o que está feito.

As condições do solo paulista, as suas riquezas naturaes, os capitães que procuram applicação, em summa, o surto largo do admiravel progresso do Estado de S. Paulo, requerem, exigem que se formem homens capazes, pela sua competencia technica e a sua coragem prática, de fazer da terra que habitam um grande centro industrial com vida propria, concorrendo na lucta mundial pela offerta de seus productos. O caminho seguro para isso é a escola profissional, de onde sairão operarios aptos para as officinas industriaes e para os campos da lavoura, e mestres de obras conhecedores dos seus misteres, capazes de tomar a direcção dos serviços e das fabricas, sem que haja necessidade de tomar de emprestimo directores europeus para todas as grandes industrias, como hoje geralmente se pratica.

Neste momento vem á luz da publicidade um formoso livro sob este titulo sincero—“Eduquemos”—trabalho cuidadoso e reflectido do Dr. Arthur Assis, illustrado director do Instituto Escolastica Rosa, de Santos. Em ponderado capitulo acerca da educação profissional deparam-se ideias sans, que muito alentam aos que cogitam de tal assumpto. A convicção do autor transluz nestas justas palavras:

O ensino profissional na escola impõe-se por todos os principios e notadamente pelas ingentes necessidades da vida moderna. Vida cara, população intensa, concurrencia em tudo, poucos centros de trabalho ainda. Sáiam das escolas os artistas, e estes irão modalisar as industrias. A produção nacional extender-se-á, e a vida ha de baratear por certo, embora seja a população intensa; * * * as officinas e as culturas serão perfeitos abrigos para o homem trabalhador e honesto. Eis o resultado economico desse problema a resolver.

De facto, é preciso crear uma mentalidade praticamente orientada, que possa sustentar por si a industria e o commercio do paiz, fazendo-lhe a vigilante defeza economica da mesma forma que na terra e no mar o exercito e a marinha attentam na defeza nacional.

A Allemanha tão forte pelo seu grande poder material, é tambem incontestavelmente uma das maiores forças na industria e no commercio mundiaes, porque, em quanto disciplinava os seus soldados e os seus marujos, não esqueceu de apparelhar esse exercito de engenheiros, de industriaes, de commerciantes, que têm penetrado os varios pontos do planeta em conquista da preeminencia nos melhores mercados.

No relatório com que Maurice Roger se desempenhou da missão de estudar o movimento do ensino technico na Inglaterra, em 1908, observou que as causas que ahí

tornam indispensavel uma organisação do ensino technico, são, guardadas as proporções, as mesmas dos outros paizes. Como por toda a parte, é a aspereza da concurrencia que ahí impõe a necessidade da utilização de todas as forças productoras, occupando o primeiro logar, a preparação da mão de obra. O que nos ultimos tempos tem concorrido para tornar mais insistente a necessidade da educação profissional dos adultos, é que essa educação lhes é fornecida geralmente nos outros paizes, e, dentre estes, o que tem sabido dar melhor organisação a esse ensino, é a Allemanha, que desde longo tempo vem comprehendendo que a existencia de um pessoal consciente das exigencias de seu officio, prompto a se adaptar ao gosto do publico, de todos os publicos, formado de operarios completos e de empregados methodicamente exercitados, assegura ao paiz, que o possui, uma real superioridade.

Ora, o que se dá na Inglaterra, verifica-se tambem nos demais paizes. Quer observadas as cousas pela sua face interna—a necessidade de formar artistas e operarios para a industria indispensavel ao consumo do povo—quer observadas pelo lado externo—a necessidade de armar de competencia o pacifico exercito para a grande concurrencia industrial e commercial do mundo—o ensino profissional é uma instituição que se impõe soberanamente como pujante alavanca do progresso das nações.

Cada nação, prosperando dentro na esphera da sua actividade, e as nações americanas em frente das nações europeas, todas movidas pelo esforço de uma colossal concurrencia, produzirão a harmonia geral por intermedio da industria e do commercio, que suavisarão o embate dos interesses equilibrando as necessidades dos productores e dos consumidores.

Na America, os Estados Unidos constituem a melhor escola para os demais paizes deste continente; e agora que um Congresso Pan Americano encara com sinceridade o estudo das questões mais vitaes, procurando em sympathia fraternal, revigorar os factores do progresso neste novo mundo, é propicio o momento para propor que as escolas profissionais se multipliquem lançando as bases firmes da construcção technica em todo o territorio americano.

Para esse resultado, julgamos que as varias escolas devem approximar-se umas das outras, por meio da permuta annual de um certo numero de professores e alumnos.

Este systema escolar de permuta, que é já uma conquista no tocante aos cursos dos estudos superiores, mais se impõe tratando-se de estudos praticos profissionais, em virtude da variedade de meios, das condições da terra, do clima, do caracter e dos costumes dos diversos paizes, principalmente no que respeita ao desenvolvimento da industria agricola e pastoril.

Visando o interesse commum das nações reunidas, é essa a ideia que temos a honra de propor ao Segundo Congresso Scientifico Pan-Americano.

ORGANIZACIÓN Y DESARROLLO DE UN PLAN PARA EL CAMBIO SISTEMÁTICO DE ESTUDIANTES Y PROFESORES ENTRE LAS UNIVERSIDADES DE LOS DISTINTOS PAÍSES AMERICANOS. PLAN PARA OBTENER UN RECONOCIMIENTO MUTUO DE LOS GRADOS TÉCNICOS Y PROFESIONALES CONCEDIDOS POR LAS INSTITUCIONES DE PRIMERA CLASE EN LAS DISTINTAS REPÚBLICAS AMERICANAS.

Por DOMINGO AMUNÁTEGUI SOLAR,

Rector de la Universidad de Chile.

No necesito asegurar que, defriendo al honroso encargo que me ha sido con fiado, habría sentido especial satisfacción en cumplirlo, y en asistir al Congreso, a fin de leer mi trabajo personalmente. Por desgracia, los deberes del rectorado me impiden hacerlo.

Me limitaré, en consecuencia, a remitir un memorándum sobre el interesante tema propuesto.

Acerca del primer punto, debo advertir que no poseo los conocimientos y datos necesarios sobre las demás Repúblicas hispano-americanas, y que, por tanto, sólo puedo referirme a mi propio país.

Juzgo en conciencia que los estudiantes anglo-americanos no obtendrían provecho alguno apreciable en el caso de interrumpir sus estudios en las universidades de su propio país para continuarlos en la de Chile. Es necesario abandonar la idea de un cambio de alumnos entre los de nuestra universidad y los de las universidades americanas.

En mi sentir, los estudiantes chilenos son los únicos que alcanzarían gran ventaja en perfeccionar sus conocimientos en los institutos y universidades de los Estados Unidos.

Creo que los jóvenes chilenos podrían estudiar en los Estados Unidos con mucho provecho agronomía, arquitectura, pedagogía, instituciones políticas y las ramas de ingeniería que a continuación se enumeran: ferrocarriles, electricidad, hidráulica, minería, obras portuarias, puentes y calzadas, e industrias fabriles.

Y tal ha sido uniformemente la opinión de nuestros Gobiernos. Desde hace muchos años se han consignado en el presupuesto de la Nación partidas especiales para mantener en las universidades americanas a numerosos jóvenes que debían estudiar algunas de las mencionadas asignaturas.

En el actual presupuesto esas partidas han sido suprimidas a causa de la difícil situación por que atraviesa nuestro Erario; pero serán restablecidas tan pronto como mejore la hacienda pública.

Para hablar con franqueza, la razón principal que nos ha impedido enviar mayor número de jóvenes ha sido la carestía de la vida que se nota en Estados Unidos.

Con relación al cambio de profesores, debo asimismo manifestar que, según mi opinión, nuestros universitarios tendrían que limitar sus lecciones a una esfera muy estrecha si hubieran de ejercer su magisterio en las universidades anglo-americanas, y que, por la inversa, los universitarios norteamericanos, en general, estarían preparados para enseñar a nuestros alumnos un gran número de materias interesantes en todos los ramos del saber.

Así también lo han comprendido los gobernantes de Chile cuando han solicitado el concurso de hombres eminentes de Estados Unidos, como Mr. Rowe, por ejemplo, a fin de que den conferencias en esta universidad.

En tal sentido, tampoco puede haber cambio de maestros entre uno y otro país.

Acerca del segundo punto, o sea, la formación de un plan para obtener el canje de títulos y grados entre las universidades del Continente americano, tengo el orgullo de expresar que la política del Gobierno y Universidad de Chile ha sido sumamente generosa y liberal.

Entre mi país y las Repúblicas de Ecuador y de los Estados Unidos del Brasil, se han celebrado con tal objeto tratados especiales, que acompaño en copia.

Además, el Gobierno de Chile, con fecha 17 de junio de 1909, ha ratificado la convención que celebró en la ciudad de México la Segunda Conferencia Internacional Americana, sobre la misma materia, a 23 de enero de 1902, firmada en este último día, entre otros países, por los Estados Unidos de América.

Acompaño una copia del documento aludido, y no necesito agregar que sería muy satisfactorio para la Universidad de Chile, que el Gobierno de los Estados Unidos ratificara esta Convención.

La cordialidad y fraternidad de las universidades americanas entre sí contribuirían a hacer desaparecer prejuicios y a estrechar con solidez las relaciones que deben unir a todos los países de un mismo Continente.

Antes de terminar, me atrevo a insistir en una idea que juzgo de gran importancia práctica, y que, a pesar de haber sido calurosamente apoyada ante todas las universidades de América, aún no ha podido realizarse.

Se trata de la celebración de congresos universitarios periódicos en las capitales de América, a los cuales deberán concurrir representantes de todas nuestras universidades.

Estos congresos establecerían, a no dudarlo, una comunicación intelectual poderosa entre las naciones americanas; y tengo la íntima persuasión de que, si el Segundo Congreso Científico Pan-Americano, que va a reunirse en Washington en el próximo mes de enero, apoya la idea, ella será una realidad antes de mucho tiempo.

CONVENIOS ENTRE CHILE Y EL ECUADOR SOBRE RECONOCIMIENTO DE TÍTULOS PROFESIONALES, CELEBRADO EN 9 DE ABRIL DE 1897.

Por cuanto entre las Repúblicas de Chile y Ecuador se negoció, concluyó y firmó el 9 de abril de 1897, por medio de plenipotenciarios competentemente autorizados, un convenio sobre reconocimiento de títulos profesionales, cuyo tenor literal es como sigue:

CONVENIOS.

En la ciudad de Quito, a los nueve días del mes de abril de mil ochocientos noventa y siete, el Excelentísimo Señor Ministro de Relaciones Exteriores del Ecuador, Dr. Don Belisario Albán Mestanza, y el Excelentísimo Señor Enviado Extraordinario y Ministro Plenipotenciario de Chile, Don Beltrán Mathieu, con el objeto de estrechar los lazos de leal amistad que felizmente existen entre las dos Repúblicas, han celebrado, debidamente autorizados por sus respectivos Gobiernos, el siguiente convenio:

ARTÍCULO 1. Los abogados, médicos, cirujanos, farmacéuticos, ingenieros y agrimensores recibidos en los tribunales de justicia, universidades, y otras corporaciones científicas de Chile, serán admitidos al libre ejercicio de su profesión en el territorio de la República del Ecuador; y respectivamente, los que hayan obtenido esos títulos en el Ecuador, podrán hacerlos valer en Chile, sin otro requisito que el de comprobar la autenticidad del título y la identidad de la persona.

ART. 2. La autenticidad del título se hará constar mediante la legalización realizada en la forma de estilo; y la identidad de la persona se comprobará con un certificado que expida la legación o, si no la hubiere, el consulado del país cuyas autoridades expidieron el expresado título.

ART. 3. Llenadas estas formalidades, se concederá al interesado la autorización correspondiente para el ejercicio de su profesión por las corporaciones o funcionarios públicos a quienes las leyes de cada país señalen la facultad de expedir los títulos respectivos.

ART. 4. Este convenio comenzará a regir desde el día del canje de las ratificaciones, y su duración será indefinida hasta que sea abrogado por consentimiento mutuo de las dos Partes Contratantes, o hasta que alguna de ellas exprese a la otra, con doce meses de anticipación, el propósito de que cesen sus efectos.

ART. 5. El presente Convenio será ratificado, y las ratificaciones serán canjeadas en Quito o en Santiago, tan pronto como sea posible.

En fe de lo cual el Excelentísimo Señor Ministro de Relaciones Exteriores del Ecuador y el Excelentísimo Señor Enviado Extraordinario y Ministro Plenipotenciario de Chile, han firmado y sellado por duplicado este Convenio.

(L. S.)

B. ALBÁN MESTANZA.
B. MATHIEU.

Y por cuanto el convenio preinserto ha sido ratificado por mí, previa aprobación del Congreso Nacional, y las respectivas ratificaciones han sido canjeadas en la ciudad de Quito el 27 de abril próximo pasado por los Sres. don Beltrán Mathieu, Enviado Extraordinario y Ministro Plenipotenciario de Chile en Ecuador, y Don José Peralta, Ministro de Relaciones Exteriores del Ecuador, plenipotenciarios nombrados al efecto por los respectivos Gobiernos.

Por tanto, en virtud de la facultad que me confiere la parte número 19 del artículo 73 de la Constitución Política del Estado, promúlguese y llévase a efecto en todas sus partes como ley de la República.

Santiago, 27 de Septiembre de 1899.

FEDERICO ERRAZURIZ.

R. ERRAZURIZ URMENETA.

Pedro Montt, Presidente de la República de Chile.

Por cuanto entre las Repúblicas de Chile y la del Ecuador se concluyó y firmó en Quito el 16 de agosto de 1902, por medio de plenipotenciarios autorizados al efecto, una convención que amplía las estipulaciones del tratado sobre mutuo reconocimiento de títulos profesionales celebrado entre Chile y Ecuador el 9 de abril de 1897, Convención cuyo texto es el siguiente:

A 16 de agosto de 1902, reunidos en Quito los Excelentísimos Sres. Dr. Alfredo Baquerizo Moreno, Ministro de Relaciones Exteriores del Ecuador y Galo Irrazábal Zañartu, Enviado Extraordinario y Ministro Plenipotenciario de Chile, y animados ambos del común propósito de estrechar más aún los vínculos de simpatía y leal amistad que unen a sus respectivos países, han convenido en ampliar las estipulaciones del tratado sobre mutuo reconocimiento de títulos profesionales celebrado entre Chile y Ecuador el 9 de abril de 1897.

Por tanto, y debidamente autorizados por sus respectivos Gobiernos, han celebrado la siguiente convención:

ARTÍCULO 1. Serán válidos en Chile los exámenes rendidos y los grados que se obtengan legalmente en los colegios, universidades o corporaciones científicas del Ecuador; así como serán también válidos en el Ecuador los exámenes rendidos y los grados que se obtengan de igual modo en Chile.

ARR. 2. En consecuencia, los alumnos de dichos colegios, universidades o corporaciones no estarán sujetos a más requisitos que los de comprobar la identidad personal del interesado y la autenticidad de los documentos correspondientes.

ARR. 3. La identidad deberá comprobarse por un certificado expedido por la legación, o en su falta, por un consulado de la República cuyas autoridades expidieren los documentos, y la autenticidad de éstos en la forma acostumbrada.

ARR. 4. El canje de las ratificaciones de esta convención se hará en Quito, o en Santiago de Chile a la brevedad posible; y canjeadas dichas ratificaciones, su vigencia será indefinida salvo, siempre, el derecho de cualquiera de las partes para notificar a la otra, con un año de anticipación, su voluntad de que termine.

En fe de lo cual el Excelentísimo Señor Ministro de Relaciones Exteriores del Ecuador y el Excelentísimo Señor Enviado Extraordinario y Ministro Plenipotenciario de Chile han firmado y sellado, por duplicado, este convenio.

(Firmado.)

A. BAQUERIZO M. (L. S.).

G. IRARRAZABAL Z. (L. S.).

Y por cuanto la convención preinserta ha sido ratificada por mí, previa la aprobación del Congreso Nacional, y las respectivas ratificaciones se han canjeado en esta capital el día 14 de enero del año en curso:

Por tanto, en uso de la facultad que me confiere la parte 19 del artículo 73 de la Constitución Política del Estado, dispongo y mando que se cumpla y lleve a efecto en todas sus partes como ley de la República.

Dada en la sala de mi despacho en Santiago a treinta días del mes de Mayo de mil novecientos nueve.

(Firmado.)

PEDRO MONTT.

RAFAEL BALMACEDA

TRATADO SOBRE CANJE DE TÍTULOS Y GRADOS.

Convención sobre ejercicio de profesiones liberales celebrada entre Chile y los Estados Unidos del Brasil el 4 de mayo de 1897.

Federico Errázuriz, Presidente de la República de Chile.

Por cuanto entre las Repúblicas de Chile y de los Estados Unidos del Brasil, se negoció concluyó y firmó el 4 de mayo de 1897, por medio de plenipotenciarios competentemente autorizados al efecto, una Convención sobre el ejercicio de profesiones liberales, cuyo tenor es a la letra como sigue:

El Presidente de la República de Chile y el Presidente de la República de los Estados Unidos del Brasil, habiendo acordado celebrar una convención sobre el ejercicio de las profesiones liberales, nombraron para ese fin sus plenipotenciarios, a saber:

El Presidente de la República de Chile, a don Joaquín Walker Martínez, Enviado Extraordinario y Ministro Plenipotenciario de la misma en el Brasil;

El Presidente de la República de los Estados Unidos del Brasil, al General de Brigada don Dionisio Evanjelista de Castro Cerqueira, Ministro de Estado de Relaciones Exteriores.

Los cuales, después de canjear sus plenos poderes, que hallaron en buena y debida forma, convinieron en lo siguiente:

ARTÍCULO 1. Los ciudadanos de cualquiera de las dos Repúblicas contratantes podrán ejercer libremente en el territorio de la otra, la profesión para la cual estuviesen habilitados por diploma o título expedido por la autoridad nacional competente, siempre que para ese ejercicio no sea exigida por la ley la calidad de ciudadano chileno o brasilero.

Los certificados de estudios preparatorios o superiores en cualquiera de los dos países, expedidos en favor de nacionales de uno de ellos, producirán en el otro los mismos efectos que les atribuyere la ley de la República de donde emanen.

ART. 2. El diploma o certificado autenticado y el certificado de identidad de persona pasado por el agente diplomático o consular de la nación que hubiere expedido el diploma o certificado, producirán los efectos pactados en la presente Convención, después de registrados en el Ministerio de Relaciones Exteriores, que dará conocimiento del registro al ministerio o repartición a que interesare el ejercicio de la profesión.

ART. 3. La presente Convención regirá por tiempo indeterminado, cesando un año después que una de las Altas Partes Contratantes la hubiese denunciado a la otra.

Será ratificada y las ratificaciones canjeadas en Río Janeiro, después de aprobadas por los Congresos de las dos Altas Partes Contratantes.

En testimonio de lo que los respectivos Plenipotenciarios firmaron y sellaron la presente Convención.

Hecha en la ciudad de Río Janeiro, a los cuatro días del mes de mayo de 1897.

[L. s.]

JOAQUÍN WALKER MARTINEZ.

DIONISIO E. DE CASTRO CERQUEIRA.

Y por cuanto la convención ha sido ratificada por mí, previa la aprobación del Congreso Nacional, y las respectivas ratificaciones se han canjeado en la ciudad de Río Janeiro el día 13 de setiembre del presente año, por los plenipotenciarios nombrados al efecto por los Gobiernos de Chile y de los Estados Unidos del Brasil; por tanto, en virtud de la facultad que me confiere el artículo 73, parte 19 de la constitución política, dispongo y mando que se cumpla y lleve a efecto en todas sus partes como ley de la República.

Dada en la sala de mi despacho, a 31 del mes de diciembre de 1898.

FEDERICO ERRÁZURIZ E.

V. BLANCO V.

Pedro Montt, Presidente de la República de Chile.

Por cuanto entre la República de Chile, Argentina, Bolivia, Colombia, Costa Rica, República Dominicana, Ecuador, El Salvador, Estados Unidos de América, Guatemala, Haití, Honduras, México, Nicaragua, Paraguay, Perú y Uruguay, se concluyó y firmó en la ciudad de México, el 23 de Enero de 1902, por medio de Plenipotenciarios competentemente autorizados, una Convención cuyo texto dice como sigue:

ARTÍCULO 1. Los ciudadanos de cualquiera de las Repúblicas que suscriben la presente Convención, podrán ejercer libremente en el territorio de las otras la profesión para la cual estuvieren habilitados con un diploma o título expedido por la autoridad competente en cada uno de los países signatarios; con tal que dicho diploma o título cumpla con los requisitos establecidos en los artículos 4 y 5, siempre que la ley del país en que va a ejercerse la profesión no exija para su ejercicio la calidad de ciudadano.

Los certificados de estudios preparatorios o superiores, expedidos en cualquiera de los países que celebran esta convención, en favor de nacionales de uno de ellos, producirán en todos los países contratantes los mismos efectos que les atribuyere la ley de las Repúblicas de donde emanen, siempre que haya reciprocidad y no resulten ventajas superiores a las reconocidas por la legislación del país en que se quiera hacer uso de esos certificados.

ARR. 2. Por lo que respecta a los títulos profesionales procedentes de los colegios o universidades de cada Estado, Territorio y Distrito de Columbia de los Estados Unidos de América, en vista de que esas instituciones no se hallan bajo el patronato del Gobierno Federal, ni en muchos casos del de los Gobiernos de los Estados, sólo se reconocerán por los países signatarios los títulos o diplomas expedidos por los colegios o universidades de los Estados cuya legislación ofreciere reciprocidad y que hubieren sido expedidos según las condiciones prescritas en el artículo 5 de esta convención.

ARR. 3. Cada una de las partes Contratantes se reserva, sin embargo, el derecho de exigir a los ciudadanos de las otras, que presenten diplomas o títulos de médico o de cualquiera otra profesión relacionada con la cirugía y la medicina, incluyéndose también la de farmacéutico, que se sometan a un previo examen general sobre los ramos de la profesión que acredita el diploma o título respectivo, en la forma que cada Gobierno determine.

ARR. 4. Cada una de las Altas Partes Contratantes pondrá en conocimiento de las otras, cuáles son sus universidades o cuerpos docentes, cuyos títulos o diplomas deban ser aceptados por los demás, como válidos, para el ejercicio de las profesiones de que trata esta convención.

Por lo que respecta a la observancia de la disposición anterior por parte de los Estados Unidos de América, el Departamento de Estado de este país pondrá en conocimiento de las otras Repúblicas signatarias, todos los actos legislativos de los respectivos Estados de los Estados Unidos referentes al reconocimiento de los títulos o diplomas de los demás países firmantes, y transmitirá a los distintos Estados de los Estados Unidos, cuya legislación ofreciese reciprocidad, las informaciones que reciba, dando a conocer los títulos y diplomas de los respectivos cuerpos docentes o universidades de las otras Repúblicas que éstas recomendaran como válidas.

Las demás Partes Contratantes reconocerán los títulos y diplomas de las Universidades de los Estados, territorios y del Distrito de Columbia de los Estados Unidos que cada una de ellas eligiere.

No obstante esta disposición, aquellas instituciones docentes de los Estados Unidos que no fueran reconocidas por las demás Repúblicas signatarias y que se considerasen con títulos suficientes para serlo, podrán solicitar el reconocimiento de sus diplomas profesionales ante los Gobiernos respectivos, mediante una solicitud acompañada de los justificativos correspondientes, los que serán calificados por la autoridad competente de cada uno de los países contratantes.

ART. 5. El diploma, títulos o certificados de estudios preparatorios y superiores, debidamente autenticados, y el certificado de identidad de persona expedido por el respectivo agente diplomático o consular, acreditado en la nación que hubiere otorgado cualquiera de esos documentos, producirán los efectos pactados en la presente Convención, después que hayan sido registrados en el Ministerio de Relaciones Exteriores del país en que se desea ejercer la profesión; debiendo dicho Departamento de Estado poner este trámite en conocimiento de la Cancillería del país de donde el título emana.

ART. 6. La presente convención no altera en manera alguna los tratados que las Altas Partes Contratantes tengan actualmente en vigor y ofrezcan mayores franquicias.

ART. 7. La presente convención regirá por tiempo indeterminado, pudiendo cualquiera de las Altas Partes Contratantes hacerla cesar, por lo que a ella respecta, un año después de haberla formalmente denunciado a las otras.

No será indispensable para la vigilancia de este convención su ratificación simultánea por todas las naciones signatarias.

La que lo apruebe lo comunicará a las demás por la vía diplomática, y este procedimiento hará las veces de canje.

En fe de lo cual, los plenipotenciarios y Delegados firman la presente Convención y ponen en ella el sello de la Segunda Conferencia Internacional Americana.

Hecho en la ciudad de México, el día 28 de enero de mil novecientos dos, en tres ejemplares escritos en castellano, inglés y francés, respectivamente, los cuales se depositarán en la Secretaría de Relaciones Exteriores del Gobierno de los Estados Unidos Mexicanos, a fin de que de ellos se saquen copias certificadas para enviarlas por la vía diplomática a cada uno de los Estados signatarios.

Y por cuanto la Convención preinserta ha sido ratificada, previa la aprobación del Congreso Nacional y las respectivas ratificaciones han sido depositadas en la Cancillería de México.

Por tanto, en virtud de la facultad que me confiere el artículo 82, parte 19 de la Constitución Política del Estado, dispongo y mando que se cumpla y lleve a efecto en todas sus partes como ley de la República.

Dada en la Sala de mi Despacho, en Santiago, a diecisiete de junio de mil novecientos nueve.

PEDRO MONTT.

AGUSTIN EDWARDS.

UNIVERSIDADES EXTRANJERAS RECONOCIDAS POR LA DE CHILE PARA LOS EFECTOS DE LA COLOCACIÓN DE GRADOS.

Los diplomas de bachiller y de licenciado o doctor expedidos por cualquiera Universidad extranjera acreditada, sirven para comprobar que el candidato ha hecho estudios y obtenido aprobación en los ramos que, según los estatutos de la misma universidad extranjera, se necesiten para conferir dichos diplomas.

Los individuos que solicitaren grados de la Universidad de Chile, y presentaren títulos de licenciados expedidos por universidades extranjeras cuyas facultades hubieren sido reconocidas, están exentos de presentar títulos de bachilleres y certificados de exámenes parciales; pero en todo caso quedan obligados a rendir las pruebas finales.

Los que soliciten el grado de licenciado en la Facultad de Leyes, aunque presenten títulos de facultades universitarias reconocidas, están obligados a rendir examen de los códigos chilenos y de práctica forense. (Decreto de 11 de septiembre de 1866.)

Están reconocidas para la colocación de grados las universidades siguientes:

En la Facultad de Leyes y Ciencias Políticas: Las universidades españolas, Decreto de 18 de enero de 1848; la de Quito, decreto de 1 de abril de 1862, la Academia de Estudios de Guatemala, decreto de 23 de abril de 1866.

En la Facultad de Medicina y Farmacia: Las Universidades de Stokolmo, Copenhague, Edimburgo, Viena, Berlín, Francia, Padua, Pavia, Bolonia, decreto de 18 de

enero de 1848; la de Bruselas, decreto de 9 de octubre de 1856; la de Giessen, decreto de 13 de noviembre de 1856; la de Harvard, decreto de 15 de noviembre de 1856; la de Kiel, decreto de 20 de marzo de 1857; las de Hamburgo en el Hesse Electoral y de Wirzburgo en Baviera, decreto de 28 de noviembre de 1864, la Facultad de Medicina en la Universidad de Lima, decreto de 19 de noviembre de 1867; la de Dublin, decreto de 18 de mayo de 1868; la de Erlangen, decreto de 26 de noviembre de 1868; la de Munich, decreto de 7 de abril de 1870; las de Madrid, Barcelona, Granada, Santiago, Sevilla, Valencia y Valladolid, acuerdo de 30 de junio de 1884; el Colegio de Médicos Cirujanos del Departamento de Medicina del Colegio de Columbia en Nueva York, el Colegio de Yale en New Haven y la Universidad de Pensylvania en Filadelfia, acuerdo de 24 de noviembre de 1884; la de Melbourne, acuerdo de 18 de Marzo de 1887.

En la de Ciencias Físicas y Matemáticas: La Escuela Politécnica de Cassel, decreto de 6 de diciembre de 1858.

UNIVERSIDADES EN GENERAL.

La Universidad de Gante, decreto de 6 de abril de 1864; la de San Simón de Cochabamba, decreto de 7 de abril de 1865; todas las de Italia, decreto de 14 de mayo de 1868; la de Londres, acuerdo de 15 de marzo de 1886.

En sesión de 20 de mayo de 1901, se reconocieron todas las universidades alemanas, y todas las latinoamericanas.

En sesión de 30 de octubre de 1905, se tomó igual acuerdo respecto de las Universidades de Harvard, Yale, Columbia (en Nueva York), Boston, Pennsylvania, Minnesota, Chicago, Washington en San Luis, Johns Hopkins, Leland Stanford, Ann Arbor y Cornell (en Nueva York).

En sesión de 14 de junio de 1909, se reconoció la Universidad de París.

En 8 de noviembre de 1910, se acordó agregar a la lista las universidades reconocidas por la de Chile, las siguientes de los Estados Unidos de Norte América: University of Texas, University of Virginia, Syracuse University, University of Wisconsin, Armour Institute of Technology, Princeton University, Rensselaer Polytechnic Institute, State University of Iowa, University of Illinois y University of Michigan.

En 29 de agosto de 1910, todas las universidades oficiales de Europa.

ORGANIZACIÓN Y DESARROLLO DE UN PLAN PARA EL CAMBIO SISTEMÁTICO DE ESTUDIANTES Y PROFESORES ENTRE LAS UNIVERSIDADES DE LOS DISTINTOS PAÍSES AMERICANOS. PLAN PARA OBTENER UN CONOCIMIENTO MUTUO DE LOS GRADOS TÉCNICOS Y PROFESIONALES CONCEDIDOS POR LAS INSTITUCIONES DE PRIMERA CLASE EN LAS DISTINTAS REPÚBLICAS AMERICANAS.

Por RÓMULO E. DURÓN,

Secretario de Instrucción Pública de Honduras.

El desarrollo del primer punto respecto a Honduras exige una noticia de lo que disponen nuestras leyes acerca de la enseñanza profesional, la que se imparte en la Universidad Central de la República.

Las facultades para esta enseñanza son tres: la de jurisprudencia y ciencias políticas la de medicina, cirugía y farmacia y la de ciencias físico-matemáticas. En cada una de ellas se adquiere el título de licenciado; y se adquiere también el de doctor mediante un curso más de estudios.

Los de la Facultad de Jurisprudencia comprenden las siguientes asignaturas: Elementos de derecho natural; elementos de sociología; elementos de derecho romano;

derecho civil; economía política y estadística; derecho penal; derecho político; derecho administrativo; derecho internacional público; derecho internacional privado; procedimientos civiles; procedimientos criminales; derecho comercial y de minería; legislación militar; medicina legal y jurisprudencia médica; historia del derecho; filosofía del derecho; legislación comparada; historia crítica de la literatura.

Los estudios de la Facultad de Medicina comprenden: Anatomía, disección y ejercicios histológicos; física aplicada a la medicina; botánica médica; química general y mineralogía; zoología médica; fisiología humana; análisis químico; patología general; patología y clínica quirúrgicas; medicina operatoria; patología médica; obstetricia; terapéutica y materia médica; farmacología; clínica médica y anatomía patológica; medicina legal; toxicología; higiene; historia de la medicina; historia y filosofía de las ciencias médicas; crítica de las diversas escuelas médicas.

Los estudios de la Facultad de Ciencias, que hoy está cerrada por falta de alumnos, comprenden: Complementos de álgebra, geometría y trigonometría; zoología, botánica y mineralogía; geometría analítica; economía política y estadística; dibujo lineal; cálculo diferencial e integral de diferencias y variaciones; física experimental; química aplicada; geometría descriptiva, sombras y perspectivas y ejercicios de estereotomía; mecánica racional; análisis químico; geología; código de minería; dibujo de paisaje; construcción y arquitectura; mecánica aplicada y máquinas; metalurgia; nociones de dibujo de figuras; caminos ordinarios y caminos de hierro; puertos, faros y navegación interior; dasótica y selvicultura; idioma inglés o francés; laboreo de minas y su preparación; topografía, levantamiento de planos, construcción de perfiles y trazado de curvas de nivel; dibujo topográfico; cosmografía física del globo y geodesia; astronomía física y de observación; física matemática; geología y paleontología.

Las cuatro últimas asignaturas de la Facultad de Jurisprudencia y de la Facultad de Ciencias y las dos últimas de la de Medicina obligan sólo para el doctorado.

Siendo estos los planes de estudios, Honduras podría ofrecer profesores para el estudio del derecho público interno del país, esto es, su derecho político, administrativo, civil, comercial, de minería, penal, militar y procesal; y para aumentar su cuerpo docente podría solicitar profesores de las restantes materias expresadas.

Los gastos de traslación y de regreso de profesores serían de cuenta del país que los pidiera. Los honorarios se fijarían por contrata.

En cuanto a los alumnos, Honduras podría admitir a los de los demás países americanos en igual condición que a los nacionales, costeándoles su viaje de cualquier puerto de la República a la capital y tomándolos a su cuidado hasta el término de los estudios, siendo de cuenta del Gobierno todo gasto, lo mismo que los de regreso al país de su procedencia.

Iguales condiciones reclamaría para los nacionales hondureños, procurando siempre la equivalencia de gastos, hecha excepción de los derechos de matrícula, de exámenes y de título, que se dispensarían a todos.

El canje de profesores y alumnos debería pactarse por medio de una convención entre los países americanos en la que se comisionara a la Unión Pan-Americana para efectuarlo, a solicitud o iniciativa de cada uno de dichos países.

La Unión Pan-Americana se pondría en comunicación con el Gobierno respectivo, por medio del Ministerio de Relaciones Exteriores, anunciándole la solicitud de profesores o el envío de alumnos, según el caso. El número de profesores y alumnos para el canje quedaría fijado en la convención, no pudiendo pasar de cinco de uno y de otros.

En cuanto al número segundo del tema, creo que también debería ser objeto de una convención entre los países americanos.

En el número anterior queda indicado que se pueden obtener en Honduras los títulos de licenciado y de doctor en las facultades de Jurisprudencia y Ciencias Políticas, de Medicina, Cirugía y Farmacia y de Ciencias. También se pueden obtener el de notario en la primera de dichas facultades, los de licenciado en farmacia y de

practicantes y matronas en la segunda; y los de agrimensor, perito minero, perito constructor, perito químico, perito mecánico y perito agrónomo, en la tercera. Todos estos títulos son extendidos por el Rector de la Universidad con noticia del grado conferido por el Decano de la facultad respectiva.

Honduras, por su parte, se obligaría a dar informe, por medio del Ministro de Relaciones Exteriores, a un centro común, que podría ser la Unión Pan-Americana, de los títulos conferidos ya por el Rector de la Universidad Central y de los que se siguieran expidiendo, y dicha oficina iría anotando en un registro abierto a todas las Repúblicas americanas el nombre de la persona titulada, la profesión a que se refiere el título y el número de éste y su fecha. La oficina asumiría además la obligación de enviar mensualmente a cada una de las restantes Repúblicas americanas un conocimiento de las partidas anotadas en el registro, relativas a Honduras. En caso de que fuera necesario comprobar la identidad de un título, la Unión Pan-Americana podría certificar a favor del interesado si constaba la partida correspondiente en el registro. Esto se entiende sin perjuicio de la legalización del título por la Secretaría de Relaciones Exteriores de Honduras y la del país en que se hubiera de hacer uso de él.

El registro se publicaría en el Boletín de la Unión Pan-Americana.

El procedimiento sería el mismo por parte de cada uno de los demás países de América.

En suma, una convención entre todas las Repúblicas americanas sería el medio adecuado para organizar el cambio sistemático de estudiantes y profesores entre las universidades de ellas, lo mismo que para obtener un conocimiento mutuo de los grados técnicos y profesionales concedidos por las instituciones de primera clase de dichas Repúblicas, comisionando para uno y otro objeto a la Unión Pan-Americana.

PLANS FOR BRINGING ABOUT A MUTUAL RECOGNITION OF EDUCATIONAL CREDENTIALS, PARTICULARLY TECHNICAL AND PROFESSIONAL DEGREES ISSUED OR GRANTED BY INSTITUTIONS OF THE FIRST RANK.

By AUGUSTUS S. DOWNING,

Assistant Commissioner for Higher Education, The University of the State of New York.

In extending the invitation to discuss this topic, the president of the subsection said:

"We must treat each national system of education as a thing by itself, and see to what stage of intellectual development and competence it brings its students at the time when they wish to come to an American university or technical school."

My first thought was to tabulate the preliminary educational requirements for admission to higher institutions, colleges, professional and technical schools in those countries from which students migrate to America. I thought to outline the plan by which we can accept the students from foreign institutions without undertaking to convert these requirements into exact requirements for entrance to our own institutions. I thought to plan that those capable of going on with their education in our higher institutions should not be under the necessity of meeting our examinations, and should be admitted at once to the institutions even though they might not be able to complete the prescribed course in the same number of years that our own students take to complete it; that is, it might take these foreign students five years to complete the work which ours do in four.

But after accepting the invitation to discuss the State control of medical licensure and the mutual recognition to be accorded academic degrees, I determined to make the three papers before this congress a trilogy—each in itself complete but all closely related one to the others.

The problem for solution may be stated fairly, then, as follows: How can a liberal policy be formulated that shall deal justly with all students migrating to the Western Hemisphere not only from the various European countries, but from Asia, Africa, and Australia as well, without lowering educational standards or discriminating against our own. First, all will recognize the closer and more friendly relations are in process of development on this hemisphere. This Union is proof of the same. Canada and the British provinces should be included within these closer and more friendly relations. Evidence of this is found in the following quotation from a recent letter in our files:

"The governor asks me * * * to invite your observation as to the possibility of a student passing through the secondary schools in that colony obtaining the same privileges in American schools as those which would be accorded to him in England."

Second, closer and more friendly relations between the States of America will materially influence our relations with both east and west. Convenience of access to China, Japan, India, and Australia, by the West, has already brought to the United States the best and most ambitious students of these countries.

The records of our university show with clearness the growth of such student migration. When formulating a liberal policy of attraction, we must at the same time provide a just standard of admission.

Credential recognized for two distinct purposes.—Plans for the mutual recognition of educational credentials by the educational authorities of the several States on the Western Hemisphere must differentiate two distinct purposes: First, That they are presented for admission to institutions *ad eundem gradum* in the attainment of an education, which, for distinction, may be termed student migration; second, that they are presented in lieu of the State's examinations for admission to the practice of a profession.

Student migration.—In devising this liberal policy a clear vision of the basis on which such policy must rest is essential. That basis must be equitable; that is, marked by due consideration for what is fair, unbiased, and impartial.

There must be a good understanding of the several school systems. The countries of North America must be accorded no undue advantage by reason of their more highly developed school facilities. For example, if an elementary student from the Bermudas can more advantageously pursue his secondary course in a Massachusetts academy than in a New York high school, the elementary subjects of his Cambridge junior examinations should receive the same recognition not only by New York and Massachusetts but by every educational authority in the Union.

There must be unbiased judgment of the institutions of all grades—elementary, secondary, and higher—in all the countries of the Union. For example, the student of a secondary school in Jamaica, whose migration to the university in a warmer climate will be more advantageous, should have her teacher's diploma accorded the same recognition by every college and university of the first rank within the Union without prejudice as to religion, color, or sex. I do not mean that every such institution must admit her, for some of them may not be coeducational, but her credentials should be equally acceptable to all.

The credentials presented from the several educational States of the Union must be impartially evaluated by the educational authorities of every State. There must be an absence of favoritism to either party interested in the credential submitted—the administrative officer accepting it or the student applying for its recognition. For example, the student submitting a dental credential from the College of Bogota for admission to a dental school in Pennsylvania should be admitted to the same class in the University of Pennsylvania to which he would be admitted in the University of California.

In planning this liberal policy the ultimate purpose of the education must never be lost sight of. If the student is to return to his native land for residence or the practice of his profession, he should carry back with him the highest ideals from the

country in which he completes his education and should carry back credentials evidencing the stage of intellectual development and competence he has attained.

When the resident physician of an East Indian hospital is prevented from acquiring her medical degree in Belgium by the calamity that has overtaken that State, she should be permitted to complete her education in that State of this Union where she can acquire that best suited to her purposes with the least expenditure of time, effort, and expense. The administrative officer directing her choice must be thoroughly conversant not only with the educational facilities and professional requirements of the institutions in this Union but also with the conditions that she must meet on her return to the presidency in which she practices. He should direct her to that institution best qualified to give her the education her circumstances demand, to enable her to receive the credential most widely recognized.

But when the migration involves the acquiring of residence for the purpose of professional practice the standards of administration must be based on the principle of justice—rectitude and just dealing.

In dealing with the problems of changing professional residence the administrative officer must not only give every man his due but every institution its due as well. When more than 200 medical students deliberately emigrated from the State of New York to acquire their education on lower requirements than those demanded in the State, the statute dealt justly with them by denying them the right of practice in the State in competition with their former classmates that met honestly the statutory requirement.

Not only must every man have his due and every institution its due, but there is a duty owing the State as well. When China established a medical school for the purpose of bringing western medical practice to the Chinese, and established as a condition precedent to admission that the graduate should remain to practice in China, New York State was in duty bound to see that the immigrant Chinese graduate of such institution who would practice among the wealthy Chinese of New York should meet the full requirements of the New York statute.

This principle of rectitude and just dealing must protect the individual as well as the State. Let me cite an example from my personal experience. An Egyptian dentist of German nativity, who acquired his profession in a South American institution, found himself on his way to an international congress on the outbreak of the present calamitous war. At his first port of landing he was denied disembarkation by reason of mobilization; at his second port he was again forbidden to disembark, as war had just been declared; at his final destination he became a prisoner of war, was interned and later paroled to reside in a neutral country till the close of the war. But the statutes of that neutral country did not permit of his professional practice because he did not meet its educational requirements. The administrative officer justly gave him the fullest recognition that his credentials warranted, encouraged him to complete his professional course, and secured for him admission to an institution where he was able to earn his livelihood while meeting the full requirements for legal practice in the State of his enforced residence.

Practical plans for the recognition of credentials.—The analysis of the two distinct purposes for which educational credentials are issued raises the question whether it is practicable to prepare plans for bringing about the mutual recognition of educational credentials. From New York's experience it seems quite practicable providing accurate information is obtainable and exact administration is enforced. Moreover, the time seems propitious for putting tentative plans into practical operation.

Accurate information.—In order that equity and justice shall prevail, not only must accurate information of the educational systems of the several States be available, but their ideals must be clearly understood. It is well known that the American system, by the union of the elementary, the secondary, and the higher

institutions of instruction, conserves expense, minimizes waste, and presents opportunities for education to all pupils of both sexes and all ages from the kindergarten through the university. It should be clearly recognized that an American ideal provides that every student shall find a career entirely open at the top. Entirely open at the top suggests upward draft and feeding from the bottom; vertical circulation is the American ideal instead of the horizontal.

Not only must the present institutions of the first rank be determined and the administrative authorities recognized, but provision must also be made for admission to these lists as institutions and administrations become better known and are found worthy of recognition. In the preparation of a list of institutions of the first rank some worthy institutions will undoubtedly be omitted from lack of definite information. It is known that Brazil's administration of education is by States, but I can fix neither the extent nor determine the method, for accurate information is not available.

The credentials issued must not only accurately portray the course pursued but must also be official evidence of its successful completion. The beautiful laureate of the Italian university is silent in respect to courses pursued or tests successfully met, while the *licenza liceale* both certifies the courses and the oral and written tests successfully completed.

The resident study required by the institution conferring the credential should be of such quality, extent, and duration, as to give the institution position among institutions of the first rank. Certificates should be issued as evidence of promotion; diplomas as evidence of graduation. The minimum resident study required should be: For a certificate a semester's work; for a diploma showing a baccalaureate or higher degree at least one full year, and that the final year. For example, the completion of the junior college should be evidenced by a certificate and not a diploma. The certificate should clearly discriminate between resident and nonresident work, and should give the subjects pursued and successfully completed and the time devoted to each in hours per week and weeks per semester. The baccalaureate of a college or university should clearly indicate whether it is issued wholly on resident work, on concurrent courses of the college and preparatory department, and in subjects essential to a liberal education.

Exact administration.—In order that just standards of equation may be maintained by the several States of the Union exact administration is vital. This can be acquired only by permanence of authority. The administration subject to the upheavals of partisan politics can never be permanent; that subject to the criticism of interested institutions can never be stable; that subject to voluntary or confederate agreement can never become authoritative. The medical licensing board of a State appointed by a governor elected biennially can formulate no permanent policy. All the dental schools of a State may agree to the appointment of an independent examiner of their matriculants, but while the examiner's salary depends on the good will of each dean on the one hand or on the fees paid by the matriculants on the other, it may be safely affirmed that some of the matriculates of the dental schools of that State are not meeting the requirements, or else the tenure of office of the examiner is unstable. The examination test of the college entrance examining board may be accepted by Yale for admission, but the student can not compel its recognition by Harvard.

Having set forth in the three papers presented before this congress the distinctions between licenses, university, and State degrees; having established the principles of their mutual recognition by the States of this Union; having analyzed the purposes of that recognition; having outlined the essentials of practicable procedure, it remains to perfect a tentative practical plan for organizing an American educational union that shall not only attain the influence of the great national associations, but also extend these influences to the far wider international field with the latest improvements in organization, in administration, and procedure.

As the form of government in every educational State of this Union is republican, the perfecting of practical plans is greatly simplified; and as this American Scientific Congress has already brought together representatives from the several countries of the Western Hemisphere, the time seems propitious for putting practical plans into active operation. I therefore advocate the following tentative organization to bring forth in this hemisphere in the coming years a permanent authoritative administration for the mutual recognition of educational credentials.

Name.—I would call it the American Educational Union, which shall be a union of the educational States of the Western Hemisphere, and not a confederacy or association.

Object.—The object of the union should be the mutual recognition of educational credentials, including certificates of promotion, diplomas of graduation, and licenses for professional practice. It should collect accurate information regarding educational institutions and promote just standards of administration. It should have power to draw agreements and to determine equities thereunder.

Organization.—The three functions of government should be clearly recognized—the legislative, the executive, and the judicial. The legislative function should properly be committed to delegates from administrative bodies and representatives of educational institutions.

The executive powers should be committed to a limited number of officers closely related to the delegates or representatives, and this commission should form the nucleus of a larger executive committee.

It should be the duty of the judiciary to collect accurate information for the use of the union, to determine the standing or rank of the institutions having membership in the union, and to draw formal agreements between the administrations having delegates in the union.

To the representatives of republican forms of government this suggestive skeleton is sufficient. The methods of procedure in the formation of tentative and permanent organizations are well known. If the facts I have endeavored to set forth from New York State's educational experience, in my three papers, have merit or force, a representative committee of this congress can at this time with power put in operation forces that in my judgment will lead to the highest and greatest educational good on this continent, and will bring about not only better and more cordial relations between the higher institutions of learning, but will establish more firmly the good feeling and friendship among all the States of the American Union.

At the conclusion of the program the chairman of the section, Dr. P. P. Claxton, announced the appointment of a committee on resolutions of the section to consist of Dr. Ernesto Nelson, of Argentina; Dr. Luis A. Baralt, of Cuba; and of himself, and stated that all resolutions should be in the hands of this committee not later than 2 o'clock of this same day. Dr. Claxton also in his official capacity as Commissioner of Education of the United States extended a very cordial invitation to the delegates from Latin America to visit and avail themselves of the services of the Bureau of Education.

Adjournment.

GENERAL SESSION OF SECTION IV.

NEW WILLARD HOTEL,
Friday morning, January 7, 1916

Chairman, P. P. CLAXTON.

The session was called to order at 9.30 o'clock by the chairman.

Owing to the large number of papers submitted to Section IV, Education, the chairman announced that this session would be devoted, in so far as possible, to the reading of papers of general educational interest, and that the papers on the Pan American topics would be reserved for the concluding session of the section, which would take place the afternoon of the same day, with Sr. José María Gálvez, of Chile, as presiding officer.

The following papers were presented at this session, many of which were read by title:

Algunas ideas sobre nuevas orientaciones de la enseñanza, by ABEL J. PÉREZ.

Motivos de una ley de educación común, by ABEL J. PÉREZ.

¿Debería ser una sola escuela la unidad local de administración en el distrito o en una esfera más amplia? By ENRIQUETA COMPTE Y RIQUÉ.

Edad y demás condiciones en que debe hacer el niño el primer año, o sea el noviciado en la escuela elemental, para no perjudicar su desarrollo físico. By MARIANO PEREIRA NÚÑEZ.

¿Cuál es la manera más eficaz para preparar a los profesores elementales de las escuelas de cada clase? By MARIANO PEREIRA NÚÑEZ.

¿Cuáles son los elementos de una ley efectiva sobre asistencia obligatoria en las escuelas? By EMILIO FOURNÉ.

Adaptation of the course of study of the elementary school to needs of the child. By J. N. DEAHL.

Extramural services of State and endowed universities, including university extension, from the humanistic standpoint. By DAVID SNEDDEN.

The perpetuity of the independent college. By JOHN S. NOLLEN.

A college dormitory system. By A. W. HARRIS.

The duty of State supported universities in regard to scientific, historical, economic, and political research and publication of such research. By A. O. LEUSCHNER.

The mutual recognition of academic degrees, including reciprocity in the professions of law, medicine, dentistry, and education. By **AUGUSTUS S. DOWNING.**

The librarian: The library and the education of the people. By **MISS LUTIE E. STEARNS.**

The new profession of public health nursing and its educational needs. By **C. E. A. WINSLOW.**

The college woman as a secretary. By **MISS MARY SNOW.**

Relaciones médicas en las Américas. By **CARLOS MORALES MACEDO.**

Agricultura científica ou ensino agricola no Brasil. By **LUIS FREDERICO SAUERBRONN CARPENTER.**

Agriculture in secondary schools with special reference to the State of Minnesota. By **A. V. STORM.**

Agricultural education in county schools. By **H. L. RUSSELL.**

The American college of agriculture. By **F. B. MUMFORD.**

Agricultural education. By **E. DAVENPORT.**

Agricultural extension work. By **G. I. CHRISTIE.**

National, State, and local support of industrial education. By **DAVID SNEDDEN.**

The place of industrial education in a system of public schools of a self-governing people. By **E. DAVENPORT.**

L'Éducation physique en Bolivie. By **H. DE GENST.**

Las bellas artes en la instrucción pública de América. By **PEDRO P. TRAVERSARI, JOSÉ G. NAVARRO, and SIXTO M. DURÁN.**

Educação physica, intellectual e moral. By **LIBERATO BITTEN-COURT.**

La enseñanza de las matemáticas generales en la Universidad de La Plata. By **HUGO BROGGI.**

Enseñanza de las matemáticas en las escuelas públicas. ¿Cuál es el mejor sistema para la enseñanza de las matemáticas? By **RODOLFO MUÑOZ ORIBE.**

The educational value of endowment for public schools. By **JOHN A. BRASHEAR.**

Educational and social economic contributions of the Panama-Pacific International Exposition to Pan American interests. By **ALVIN E. POPE.**

Proyecto sobre educación moderna. By **RODOLFO ROBLES.**

El método en la ciencia pedagógica. By **LUIS ARCE LACAZE.**

Noticia synthetica do ensino no Estado de São Paulo. By **TIBURTINO MONDIM PESTANA.**

El Estado y la música en las Américas. By **NARCISO GARAY.**

El problema de la educación en el Ecuador. By **A. ESPINOSA TAMAYO.**

ALGUNAS IDEAS SOBRE NUEVAS ORIENTACIONES DE LA ENSEÑANZA.

Por ABEL J. PÉREZ,

Inspector Nacional de Instrucción Primaria del Uruguay.

I.

Es evidente que una crisis profunda, de honda repercusión moral, agita al mundo entero, llevando sus efectos a todas partes, así al hogar para modificar los lazos de la familia, ya se trate de las más humildes o las más encumbradas, como a la sociedad constituida por esos hogares; así al hombre aisladamente considerado—obrero o industrial, profesional o comerciante, político o capitalista—como a las agrupaciones que constituye, ya sean gremiales o de resistencia, universitarias, industriales, políticas, etc. Se perciben y se sienten causas latentes de agresividad general; la lucha está en pie; la controversia se mantiene pronta, dispuesta a estallar; hay una desconfianza mutua; la fe se ha debilitado; y en todas partes y para todos, hombres, familias, sociedad, industria, profesiones, sólo hay una fuerza que impulsa o atrae, y esa fuerza es el interés, es un egoísmo militante y enérgico, que reclama y absorbe todas las actividades útiles del hombre y que sugiere en él un espíritu de rebelión que flota, que lo rodea y lo orienta hacia todas las agresividades, hacia todas las cruzadas invasoras, cuyo fin sea la satisfacción egoísta del propio y exclusivo bienestar.

II.

¿Cuáles son las causas presuntas y posibles de esta crisis?

Tal vez esas causas, fundamentalmente, se encuentren en la reacción filosófica positivista de los últimos años. La filosofía, siguiendo las rutas del antiguo espiritualismo, había exagerado sus tendencias, alejándose cada vez más de las soluciones científicas y humanas. Esta exageración provocó una reacción violenta con la exageración contraria del método científico, que se erigió en soberano absoluto, en árbitro único e indiscutido, para fijar rutas al ser humano y determinar el empleo útil, eficiente, de todas sus actividades aprovechables.

Las nuevas doctrinas filosóficas iniciaron una cruzada brillante en favor de la ciencia, y fué una cruzada victoriosa, que dió a ésta, una legítima y gloriosa soberanía; que determinó su acción exuberante y magnífica, en todos los órdenes de la actividad humana, y ocupó todos los sitios, desalojando a los antiguos poseedores de lo que constituye hoy su sede absoluta.

Estas oscilaciones violentas del péndulo, que se producen en los períodos de transición entre dos épocas de la historia y que determinan dos etapas distintas, son, con frecuencia lógica, las que originan esas grandes exageraciones, que, si perduran poco en el tiempo, crean en cambio, apasionados y morbosos defensores de esas doctrinas, que extreman hasta límites inconcebibles, con los que intensifican los males de esa crisis.

Entretanto, la ciencia, aisladamente considerada, no basta a llenar toda una existencia humana: el hombre no tiene sólo una mente que educar y robustecer; tiene también un corazón que es la fuente motora del sentimiento que hay que nutrir y que orientar, y tiene asimismo una energía que cultivar, para realizar sus propios destinos.

El triunfo, sin embargo, de la ciencia positiva, fué de tal manera absoluto, que ha conmovido la sociedad en sus cimientos, arrastrándolo todo en su corriente avasalladora: antiguas creencias, viejos cultos, prejuicios arraigados, ritos comunes, ideales, seculares, dejando un hueco frío y melancólico, allí donde estaban esos altares, esos templos, esas creencias.

¿Cómo neutralizar ese frío y restablecer la normalidad individual y social, rota y desquiciada?

¿Cómo reaccionar contra esa borrasca asoladora que nos aplasta, nos entristece y nos inhabilita para la lucha fecunda y eficiente en pro del bienestar de la humanidad?

III.

El triunfo de la ciencia positiva es indiscutible y es justo; sería absurdo y fundamentalmente perjudicial levantarse contra él, pues constituye, sin duda, un glorioso triunfo que, con legítimo orgullo, puede la Humanidad inscribir en sus anales. Pero ese triunfo aislado, no basta; no es la victoria completa y armoniosa del ser humano excepcionalmente complejo y vario en sus manifestaciones, en sus exigencias y en sus actividades; contemplar correlativamente esas manifestaciones—múltiplo de una unidad variable—es perfeccionarlo, es hacerlo mejor, es sintetizarlo en un conjunto armonioso, que realice un ideal de acción y de finalidades nobles y altas.

No debemos, pues, limitarnos a esa ciencia aislada que, al robustece y vigoriza la mente en sus condiciones normales, deja inactivo el corazón y el carácter extraño a todo esfuerzo útil; debemos, por el contrario, cultivar simultáneamente todas las partes que constituyen ese ser: su organismo físico, para aumentar sus energías, velando por todo aquello que tienda a ese resultado; su organismo psíquico, vigorizando su mente con el estudio de la ciencia, cultivando su corazón por la contemplación habitual de la belleza, de la bondad, y de la virtud, en las obras de arte de los grandes maestros—literatos, pintores, escultores, etc.—en la historia de los hombres ilustres, de los héroes del derecho, de la justicia, del bien; en los apóstoles de la fraternidad; su carácter, provocando su esfuerzo metódico y constante, dándole el hábito del trabajo que disciplina las actividades y lleva por las rutas de la acción eficiente a las luchas enérgicas de la vida, con un caudal de fuerza incontrastable, que nada detiene ni paraliza en la suprema evolución dignificante de su ser.

Hay que alcanzar la noble finalidad que pretende hacer de cada hombre un conjunto armónico de pensamiento y acción, de idea y sentimiento—de bondad, de arte, de justicia—que lo haga tolerante, justo y bueno, no sólo por el concepto ético que esas cualidades íntimas representan en sí mismas, sino porque son bellas, porque son inconciliables con el ser así formado en un ambiente de soberanas armonías en el que no penetra ni lo informe, ni lo delictuoso, ni lo absurdo.

El ideal buscado debe ser la intensificación metódica y constante de la cultura en todas sus manifestaciones, física, intelectual, sentimental y volitiva, que atienda por igual a todos los órganos, que dé en el vigor y la salud del cuerpo, la eficiencia dignificante del organismo, levantándolo al elevado plano del alma misma y, al magnificar la naturaleza humana, para hacerla triunfar en las luchas del ideal, consiga corporizar el concepto de virtud, la idea de belleza perfecta, el sentimiento de la libertad, el amor leal del derecho, el culto sincero de la igualdad, para llegar así al triunfo de las democracias humanamente perfectas, como síntesis suprema de las organizaciones políticas del porvenir.

Regenerada así la humanidad por la ciencia, por el arte, por el bien, por la justicia, por la belleza, habremos alcanzado el triunfo de la solidaridad, que impulsará la vida por las rutas de un nuevo mundo moral, que vive y alienta con el aire saludable de las cumbres y en el cual todos caben y encuentran asilo todas las creencias y todas las nobles aspiraciones.

Estas ideas, en mi concepto, pueden sintetizarse en las proposiciones siguientes, que someto a la discusión.

1^o. La cultura general que contempla armoniosamente todas las manifestaciones del hombre en sus múltiples modalidades complejas, es el factor fundamental del perfeccionamiento humano.

2^o. La belleza, la justicia, la bondad, incorporadas intensa y profundamente a la educación, dándoles la majestuosa solemnidad de un dogma, pueden determinar una conciencia moral, noble y sana, independiente de todo credo religioso, y de duración indefinida.

3^o. La educación realizada dentro de estos contornos y con tales fines, sería la síntesis más humanamente perfecta de las aspiraciones que debe simbolizar la bandera de las democracias futuras.

• MOTIVOS DE UNA LEY DE EDUCACIÓN COMÚN.

Por ABEL J. PÉREZ,

Inspector Nacional de Instrucción Primaria del Uruguay.

La instrucción primaria en general, debe dividirse en dos partes: elemental y superior; la primera toma al alumno como presunto analfabeto, lo guía durante un período, que juzgo conveniente de seis años, hasta un punto en que la enseñanza se divide en dos ramas, una que es la prolongación de la primaria, y es la enseñanza secundaria, y otra, que se desarrolla sin avanzar, en un orden profesional o industrial, y es la instrucción primaria superior.

La instrucción primaria debe ser laica, obligatoria y gratuita: laica porque las democracias deben sintetizar la coexistencia de todos los derechos, de todas las libertades y de las creencias, lo que sólo es posible en un ambiente de mutuo respeto y absoluta tolerancia; obligatoria porque así lo imponen los altos intereses colectivos de la sociedad, superiores en lo trascendental, a lo individual egoísta y restringido; gratuita porque ello es la recíproca de su carácter obligatorio.

La obligación debe empezar a los ocho años y reducir el plazo, por ahora, hasta los 14, en que termina la elemental, sin desconocer que acaso no tarde mucho tiempo en imponerse ese carácter obligatorio para la enseñanza industrial.

Hay conveniencia en dar energía y rapidez a las resoluciones ejecutivas del organismo escolar, para lo que debe darse un máximo de autoridad al director de escuelas, correlacionando ésta, con un máximo de responsabilidad, y dar paralelamente una amplia dignidad técnica consultiva al consejo que trabajará en el mismo plano que el director, que será su presidente, constituyendo ambos las autoridades escolares superiores. Se complementaría y perfeccionaría este paralelismo necesario, dando un criterio para resolver los posibles conflictos entre ambas autoridades.

Las escuelas se dividirán según los principios generales sentados, en: 1º, elementales de instrucción primaria; 2º, superiores de instrucción primaria; 3º, rurales.

Las elementales son primarias y comunes en la enseñanza de sus conocimientos teóricos; las superiores, además de la intensificación de los conocimientos teóricos que da la elemental, tendrán una acentuada tendencia industrial, es decir, desarrollarán un doble programa, teórico y práctico; las rurales, como las anteriores, deberán tener doble programa, uno consagrado a estudios teóricos lo más breve posible en lo compatible con los intereses que van a atender, y el otro práctico, consagrado a las pequeñas industrias rurales.

Los profesores magisteriales se dividirán en sus títulos en la misma forma que las escuelas, y su formación tendrá inicialmente un origen universitario, que dará a su instrucción superior una amplia base científica y literaria discreta y armoniosamente correlacionada con la especialización de sus estudios profesionales, a los que se dará un cierto carácter doméstico y al mismo tiempo una orientación artística.

Estas disposiciones serán comunes a los maestros elementales superiores y rurales; pero en los dos últimos, su instrucción normal se ajustará necesariamente también al carácter profesional de esa enseñanza. Respecto de los maestros rurales, es conveniente que sus compensaciones sean siempre de las más altas y, además, asegurarles el aumento rítmico de sus sueldos, para que esos distritos menos solicitados, puedan contar con el concurso de los mejores maestros.

Las autoridades escolares subalternas que rigen los distritos administrativos, deberán ajustarse al mismo plan de las autoridades centrales, es decir: un consejo asesor deliberante, un ejecutor con amplias facultades técnicas y completa responsabilidad y un criterio preestablecido para resolver rápidamente todo conflicto posible.

Sobre provisión de cargos escolares en una forma general, acepto el concurso como un medio de hacer más impersonales esas designaciones; pero eso no impide en absoluto cierto orden de ascensos, siempre que haya un primer paso inicial en que la

competencia del candidato haya quedado irrevocablemente comprobada, con absoluta prescindencia de todo favoritismo.

Propongo también el mismo procedimiento del concurso para los cargos administrativos, pues este procedimiento da una cierta seguridad de competencia, digna de tenerse en cuenta, y aleja de una manera absoluta los favoritismos injustos y deprimidos, que son la resultante siempre de las influencias políticas malsanas.

Dentro del régimen técnico y administrativo, se busca en el proyecto asegurar la autonomía completa de los funcionarios, en un régimen correlativo de libertad y de responsabilidad, para lo cual se da al organismo escolar diferentes elementos asesores, que aseguran su funcionamiento armónico e integral. Responde esta autonomía a mantener los estímulos siempre higiénicos de la libertad, que abre un campo de emulación tonificante entre los funcionarios públicos, alejándolos de esa rutina feroz y desconsoladora que los mecaniza.

Al cuerpo médico escolar se le confiere una doble misión: Una directa sobre los escolares, con la que se relaciona su salud, sus defectos físicos, la higiene de los locales escolares y hasta los que habitan con sus familias; todo, en nombre de una trascendental higiene pública; y otra que se relaciona con el cuidado preventivo de la salud de los maestros y su asistencia médica y quirúrgica y hospitalización en su caso, del magisterio activo.

El propósito es cuidar a los maestros física y moralmente, manteniendo su salud íntegramente, porque así se conservan su energía y sus eficiencias más útiles, y moralmente, perfeccionándolo perpetuamente en el estudio, dándole ocasión de ampliar sus conocimientos, en todas las formas, en todos los momentos, creándoles bolsas de viaje, premios de descanso, aumento de compensación, como estímulos a sus esfuerzos y perpetua renovación de sus energías.

El plan desarrollado obedece a difundir cada día más la instrucción en el pueblo, a perfeccionarla, a dar nuevas actividades, y derivaciones útiles y fecundas al trabajo nacional, a vigorizar el esfuerzo de cada uno, a intensificar la cultura de los maestros, a dignificarlos dando a su carrera la majestad de un apostolado, por el prestigio que conquistan con su esfuerzo, con su labor, con su pensamiento levantado, su espíritu ecuánime, el sentimiento de la justicia y su abnegación y su desinterés a cubierto de toda incitación y todo apetito inferior o malsano.

Fundado en las consideraciones antes expuestas, formulo las siguientes proposiciones, que sintetizan en sus grandes líneas este trabajo:

1°. La escuela de la democracia para su triunfo en la igualdad, en el derecho y la justicia, debe ser la sede de la enseñanza laica, obligatoria y gratuita.

2°. La obligación escolar debe transferirse de los seis a los ocho años, para asegurar al alumno, previamente a su ingreso a la escuela, el pleno desarrollo de su cuerpo que garantice ulteriormente su eficiencia mental y su equilibrio moral.

3°. Más allá de la obligación escolar, la instrucción primaria superior debe tener un carácter acentuadamente industrial o profesional, sin invadir por eso el ambiente universitario.

4°. Con independencia de las ampliaciones que determinen los diversos programas, los alumnos de las escuelas públicas deben desarrollar su acción en un ambiente de absoluta e invariable igualdad, para hacer un hábito de los más sanos principios democráticos.

5°. El éxito fundamental de la instrucción reposa en la amplísima, en la indefinida cultura del maestro, intelectual y moral, que ensanche su visión y lleve a mayor distancia su esfuerzo y a las más altas cimas su pensamiento.

6°. Que el segundo factor de ese éxito, estriba en la amplia, metódica y continua vigilancia de las escuelas, con el mismo impecable espíritu de justicia y de igualdad.

¿DEBERÍA SER UNA SOLA ESCUELA LA UNIDAD LOCAL DE ADMINISTRACIÓN EN EL DISTRITO O EN UNA ESFERA MÁS AMPLIA? ¹

Por ENRIQUETA COMÏTE Y RIQUEÏ,

Profesora y Directora del Jardín de Infantes del Uruguay.

La escuela primaria debe perseguir un mismo tipo donde quiera que se la considere. Conviene que sus autoridades dirigentes, de distrito en distrito, de provincia en provincia, y a ser posible, de nación en nación, unidas por comunes aspiraciones, se pongan de acuerdo, pues todo plan que persiga finalidades de interés local, es conservador, y por lo tanto, no responde a las exigencias del progreso. Creo que la enseñanza elemental debe ser independiente de las doctrinas que forman el culto de los pueblos.

El niño no necesita coacción para dirigirse al bien; sus aptitudes normales, espontáneamente, tienden a definir, evolucionando, una individualidad superior a la que puedan imaginar nuestras más altas concepciones.

El párvulo estudia con avidez los fenómenos de la naturaleza, busca materia prima para transformar en provecho de sus necesidades y de las ajenas; trepa las rocas en ansia de vastas perspectivas, y al hacer exploraciones, no pregunta por el dueño del cercado que limita la propiedad territorial. Piensa que le pertenece lo que pisa; tiene la idea innata de que no hay razón que obligue a permanecer en un lugar árido y frío, cuando puede recorrerse el mundo hasta encontrar tierras feraces y climas benignos.

En verdad, las vallas que detienen la libre expansión de nuestros anhelos, son obra del convencionalismo que quiere evitar el choque de voluntades interesadas en un mismo objeto. Desde que la tribu trató de resolver el problema del reparto de bienes, ha costado mucha sangre la defensa del derecho.

Aunque los pueblos avanzados concilian el goce de la libertad con el cumplimiento del deber, en la vida republicana, no deben imponer al escolar la idea de que ha de conservar inmovibles las instituciones heredadas; porque nunca hay razón para suponer que sean las más perfectas; porque cuando lo fueran, los hombres educados con independencia de opinión, sabrían sostenerlas, y porque al hacer propaganda en favor de la libertad absoluta de creencias, se hace más fácil la evolución de los pueblos resagados.

El intercambio de ideas al través de cordilleras y de mares, que se concentra en congresos científicos y en tratados internacionales, nos presenta el espejismo de una era que no ofrecerá, al derecho natural, la traba tantas veces arbitraria del derecho político.

Las fronteras, esfumadas ya, por el corte de vías férreas, de cables eléctricos, de ondas hertzianas y vuelos de aeroplano, anuncian, para época no lejana, una ciudadanía muy distinta de la que hoy nos esforzamos por caracterizar, de acuerdo con ideales triunfantes en revoluciones pasadas.

Sobre la humareda que en estos momentos destruye tesoros de ciencia y de arte en el viejo mundo, flota como espíritu inmortal, una idea más grande, más hermosa que todas las bellezas caídas: la que enlaza las banderas de naciones separadas hasta ayer por la tradición y la sangre.

Claro se ve, mirando hacia adelante, que la Constitución de cada pueblo está llamada a ser el conjunto de disposiciones necesarias para mantener el orden local de las agrupaciones que forman la inmensa colectividad humana. ¿Porqué pues, hemos de esforzarnos por conservar al patriota, obstinadamente empeñado en defender el régimen institucional de sus mayores?

La escuela primaria no debe tener carácter nacional: sus proyecciones han de ser más vastas. La secundaria, es la que ha de definir el sello de la época en cada lugar. A la enseñanza elemental, le corresponde la hermosa misión de unir a todos los niños de la tierra por los mismos sentimientos de justicia y de fraternidad.

¹ Tema propuesto por la Sección "Instrucción" del Congreso.

Cuando de acuerdo con la vocación, busque el alumno su puesto en el reparto de la actividad social, si fué educado sin estrechez de miras, sabrá comprender que la patria es, en el concierto de las naciones, lo que el individuo dentro de la familia, lo que la familia dentro de la agrupación colectiva; y trabajará por el bien de los demás, que serán siempre hermanos, con verdadero altruismo, sin desequilibrios de pasiones insensatas.

Por ser prematura la enseñanza cívica, son tantos los casos en que fracasan sus resultados.

El amor a la patria y el amor a la familia, no se inspiran con doctrinas; se nutren en el ambiente del terruño y del hogar.

Si esta es mi opinión respecto a la educación ciudadana, con más razón, juzgo inconveniente e injusta, la enseñanza que encierra propósitos de interés local, en sentido más limitado.

La institución política, a pesar de lo dicho, tiene razones poderosas para hacerse firme en el transcurso de una época que puede abarcar la existencia de varias generaciones; pero no hay motivo para fijar el destino de un hombre, a las circunstancias del lugar en que ha nacido.

Si en tiempos pasados, el número de años que separan la infancia de la juventud pudo ser suficiente para llevar al individuo muy lejos del ambiente en que se desarrollaron las primeras energías de la vida; si la historia nos dice, con múltiples ejemplos, que fueron tronchadas o desnaturalizadas, por estrechez de miras de la educación infantil, inteligencias capaces de ser dirigentes para los destinos de la humanidad; hoy, que en pocas horas, una familia traspone los límites de la ciudad o del pueblo natal, del Estado o del continente, para buscar en otra región de la tierra, el clima que conviene a la salud, las condiciones políticas y sociales que han de proveer mejor a sus necesidades, la sustancia que puede servir para elaborar una nueva industria; hoy, que se hace indispensable un lenguaje universal, no hablemos de instrucción primaria con programa adaptado al lugar.

El concepto de la educación del hombre, ha de ser uno solo. A todos los individuos sanos, conviene lo mismo, en la esfera de la enseñanza elemental.

La instrucción agrícola no tiene motivo para caracterizar el programa de la escuela primaria en el campo, como no la tiene la industrial, en los barrios fabriles; ni la social, en los grandes centros de población.

Admito que para el mismo fin pueda utilizarse siempre la observación local; es decir que la máquina sirva al hijo del obrero para apreciar los progresos de la inteligencia humana, en el dominio de las fuerzas y de la materia, como el arado al hijo del campesino y el tranvía eléctrico al niño de la ciudad; que en la selva frondosa pueda un pequeñuelo admirar la naturaleza, como puede hacerlo otro en el parque o en el jardín. Son tan interesantes los problemas de economía con la oferta y la demanda, en las casas de comercio, como los que plantea la hacienda, con el rendimiento de la cosecha.

El punto de partida es lo diverso; la finalidad, en la enseñanza primaria, no puede serlo.

Cuando el arte del maestro haya avanzado lo que en los últimos años adelantó la ciencia; es decir, cuando las verdades proclamadas por la pedagogía, no se obtengan como hoy, casi en absoluto exprimidas de las páginas del texto; cuando cada maestro sea capaz de escribir un libro con sus propias adquisiciones en la fuente inagotable de la vida infantil y de la vida social, directamente estudiadas, no será difícil igualar por diferentes caminos, la enseñanza dada en distinto ambiente.

Todo programa ha de constar de una interpretación sobre las cosas que se ven, y de otra sobre lo que no se ve. La misma dificultad ha de vencer el maestro urbano para descubrir las bellezas de la naturaleza, que el maestro rural para hacer concebir la marcha de las instituciones ciudadanas y los convencionalismos de la vida de salón

Iguals razones hay para estrechar la visión del hijo del labriego, en el círculo del horizonte material que alcanzan sus ojos, que para reducir la del niño de la ciudad, al confín de los arrabales. Ni las aptitudes ni las aspiraciones del hombre están subordinadas al medio que rodea su infancia.

Sintetizando mi opinión diré: que la escuela primaria sólo ha de tener en vista el porvenir, y que por lo tanto, será tanto más perfecta, cuanto más universales sean los principios en que base su programa; que con criterio elevado no pueden admitirse en ella, restricciones sujetas a la época y al lugar; pero soy tan partidaria de la graduación como de la integridad, por cuyo motivo reconozco que los últimos cursos de la escuela elemental han de esbozar las especialidades que puedan tener interés en determinada localidad.

Para los fines expuestos, es necesario que las autoridades escolares, centralicen sus funciones técnicas con independencia de las administrativas, tanto como lo permita la división política del Estado y que se mantengan unidas por frecuente intercambio de ideas en todos los países civilizados.

EDAD Y DEMÁS CONDICIONES EN QUE DEBE HACER EL NIÑO EL PRIMER AÑO, O SEA, EL NOVICIADO EN LA ESCUELA ELEMENTAL, PARA NO PERJUDICAR SU DESARROLLO FÍSICO.

Por MARIANO PEREIRA NÚÑEZ,

Miembro de la Dirección General de Instrucción Primaria del Uruguay.

I. DEBATE ENTRE PEDAGOGISTAS E HIGIENISTAS.

Es muy conocida la vieja cuestión entre pedagogistas e higienistas, sobre la edad más apropiada para el ingreso del niño a la escuela elemental. Los primeros, tratando de adelantarla cada vez más; y los segundos, pugnando por demorarla. En el estado actual los pedagogistas establecen la edad de seis años, y los higienistas la de nueve años.

Se fundan los primeros, principalmente, en que comenzando a cultivar la mentalidad del niño desde los seis años, se prepara ésta por medio de la natural gimnasia, para que pueda cosechar mejores frutos de los estudios subsiguientes; y, a efecto, también, de que, en la embrionaria inteligencia del niño no hallen cabida perjudicialísimos prejuicios que vendrían a imponer al maestro la doble tarea, con el resto de los estudios, de tener que comenzar por desalojar tales errores para sustituirlos con la verdad de las cosas.

Se fundan los higienistas en que la instrucción que recibe un niño demasiado tierno, se obtiene a expensas de sus necesidades vegetativas más vitales, lo que a la vez va en contra del consejo tan admitido de: "mente sana en cuerpo sano;" y en que, por consiguiente, no habiendo en el cuerpo del niño, a los seis años, el natural desarrollo para soportar aprovechada e impunemente los primeros estudios, resultarían muy poco fructíferos los demás.

Es indudable que tales argumentos cruzados por las dos partes, y recordados aquí como ejemplo, son ya, por sí solos, bastante atendibles para dejar de interesar en el debate de tan importante asunto, a lo cual se debe ésta mi mediación en él. En efecto, no podemos negar que demorando el comienzo del cultivo de la mentalidad del niño hasta los nueve años, se corre el serio peligro de que sobre todo al llegar a la edad en que se dice generalmente que adquiere el ser humano el uso de la razón, se haya malogrado la virginidad de su alma, con prejuicios, por aquello de que: la vasija tarda mucho en perder el gusto del primer licor que en ella se depositó, sea necesario gastar muchas energías para desentrañar tales errores.

Y es innegable, igualmente, que principiando a los seis años el cultivo de la inteligencia del niño, se corre el peligro—mucho mayor, sobre todo, si se hace en las condiciones actuales en la generalidad de los países—de la degeneración de las razas humanas por el agotamiento de las fuerzas físicas, sobre todo, cuando se trata de un

maestro inconsciente, que en vez de contener al niño de inteligencia privilegiada, lo recarga de tareas abrumadoras, por el interés personal de lucir él a expensas de ese niño; olvidando que lo que hace equivale a pretender trasplantar un árbol de corpulenta especie, y cuya semilla germinó en la tierra natural, a una vasija pequeña, en la cual llegará a perder—en caso de salvar momentáneamente la vida—todas las condiciones primitivas de su especie.

II. PROCEDIMIENTO CONCILIATORIO EN ESAS DOS TENDENCIAS.

Mediar, en tan vieja como importantísima cuestión, siquiera sea para acortar distancias entre pedagogistas e higienistas, disminuyendo así los apuntados y serios peligros, ha sido, repito, el móvil que me ha hecho considerar digno de figurar éste entre los temas de que deba ocuparse este docto Congreso, como ha sido ya considerado en mi país (República del Uruguay) por las autoridades escolares y por el Gobierno, ante quienes, como miembro de la Dirección General de Instrucción Pública, propuse la innovación que sirve de tema a este trabajo; mereciendo la inmediata aprobación de ambos; sin que hasta entonces ni hasta ahora, haya sido conocido ni puesto en práctica en alguno de los demás países sudamericanos, ni tenga yo conocimiento de que se practique en alguno de los demás países.

Consiste tal manera o forma de mediar en las referidas y tan radicales tendencias, en la sencillísima disminución a la mitad del horario ordinario o general de la escuela, durante únicamente el primer año, o sea, del noviciado del niño menor de nueve años, que es, según paso a demostrarlo, en quien el horario íntegro causa mayores y más irreparables perjuicios en su físico.

En efecto, lo primero que invoqué luego que propuse tal innovación—y que lo repito ahora, con ocasión del actual congreso—es el hecho conocidísimo por los citados contendientes, de que en todas las carreras que imponen algún sacrificio, aun tratándose, como se trata en casi todas ellas, de personas mayores de edad o ya formadas, como ocurre, por ejemplo, en las carreras religiosas, el aspirante comienza por un noviciado en que apenas se le somete a la mitad de las tareas y obligaciones, durante el primer año, con el doble objeto de poder cerciorarse de la vocación de cada uno, y de acostumbrarlo a soportar las cargas que la carrera impone.

Luego, si tal precaución se toma con personas mayores, ¿no resulta ilógico desoir tan sabia enseñanza cuando se trata de débiles niños? La contestación se impone. Por esa sólo pero poderosa razón, el tierno niño necesitaría ya, indispensablemente, un noviciado de la mitad de las tareas diarias durante el primer año de su ingreso a la escuela, aun cuando hubiese pasado ya por los maternales jardines de infantes.

Otro fundamento que favorece la rápida implantación del procedimiento aconsejado, está contenido en la interrogación siguiente: ¿No es notoriamente inhumano que un niño de seis años, que hasta la víspera del ingreso a la escuela ha estado en su casa, toda su vida hábil, corriendo, jugando, durmiendo, comiendo, bebiendo y satisfaciendo todas sus demás necesidades naturales a voluntad, sin que nadie se lo impidiera, se le someta, de improviso, o sea, al siguiente día de toda esa libertad, a una reclusión, en todo sentido, por el mismo número de horas (cuatro y media) a que están sometidos los niños de doce o catorce años? ¿No puede ser ese criminal error cometido con tiernas criaturas hasta de seis años, una de las principales causas de la degeneración física de la especie humana en las actuales generaciones, en las que se observa que el hombre crece, pesa y vive la mitad de lo que las primitivas razas crecieron, vivieron y pesaron?

Tales son los principales pero no los únicos fundamentos de la generalización de la innovación que, como en mi país, propongo a los gobiernos y a las autoridades escolares de todos los demás países; ya que por su sencillez y practicabilidad, es de posible e inmediata implantación en todos ellos, aun los más pequeños y pobres, y ya que nada mejor ni a menor costo puede conciliar la eterna e importantísima cuestión en que vengo meditando.

III. ORIGEN DE TAL INNOVACIÓN.

Relataré también—a son de un nuevo y muy válido y oportuno argumento en pro de lo que vengo proponiendo, o sea, de lo que he dado en llamar: “El Medio Horario del Noviciado en la Escuela Elemental”—los antecedentes de esa reforma en mi país.

Visitando, diez años ha, cierto día de verano, a las 2 p. m., una de las escuelas públicas de los suburbios de Montevideo, en el carácter público que investía, me encontré después de casi 40 años de vida escolar, como aficionado, con la grandísima novedad para todo aquel que sepa de escuelas, de una clase escolar, de las denominadas “primer año,” con más de 70 alumnos presentes, todos ellos, excepto uno, “completamente dormidos” en plena hora escolar; y “dormidos sistemáticamente,” como que lo hacían invariablemente en la misma posición: brazos cruzados sobre las mesas y las cabezas reclinadas sobre los brazos. La maestra estaba despierta.

Como se comprenderá, quedé un buen rato contemplando curiosamente aquel notabilísimo cuadro escolar, como que pocos habían tenido ocasión de presenciario, y como que, bajo la faz artística no era trazado por la mano del hombre. Sólomente me hizo apartar la vista de él, la voz de la maestra ayudante—y más que su voz su pasmosa serenidad ante aquella sorpresa mía—que me dijo: “Usted extrañará lo que aquí pasa? No, señorita la contesté, yo no extrañé nada en la escuela en el sentido que usted parece darle a la frase, porque sé que las novedades son la característica del mundo de los incapaces, como lo es la escuela, y sobre todo, en esta clase o año. Por el contrario, confieso (sin que ello importe alentar a usted) que celebro este hallazgo, porque creo estar ya en posesión de lo que esto significa y que no es otra cosa que una verdadera protesta de la naturaleza formulada por intermedio de estos niños.

Con el correr del tiempo y provisto ya de otros datos, intencionalmente solicitados a maestros expertos y sinceros, me afirmé en esa primera impresión porque todos ellos me repitieron algo equivalente a la historia que, una vez serenada, la referida maestra, en mi visita de actitud pacífica, me había referido, como causa del trazado cuadro; y que era la siguiente: someramente, me dijo, ocurría a esta hora, que todos los niños, incluso los mismos que en las primeras horas de clase me atendían y aprovechaban mucho mis lecciones, con suma facilidad, proporcionándome con ello gran placer, ni siquiera me entendían—a pesar de los recreos reglamentarios—puesto que los unos bostezaban o suspiraban, otros se desesperaban y tomaban actitudes de descanso; y aun los pocos que respondían a mis llamados, aun cuando fijaban en misu vista, bien comprendía yo que no me veían, puesto que tenían los ojos como empañados, sin aprovechar en manera alguna mis lecciones: esto empezó por disgustarme, luego por desesperarme, y, por último, por agotar inútilmente mis fuerzas. Tal estado de cosas acabó por hacerme dejar a los niños en libertad algunos minutos y terminó con lo que usted está presenciando, a lo que primeramente intenté oponerme, pero desistí de ello más tarde porque noté que después de dormir diez o quince minutos, ya me atendían o estudiaban y aprendían, si no tanto como en las primeras horas de la clase, a lo menos lo necesario para poder trabajar yo con mucho más gusto.

IV. RESULTADOS OBTENIDOS EN LA PRÁCTICA.

Terminaré, siempre a son de nuevo argumento en pro de la innovación, dando a conocer los buenos resultados obtenidos: primeramente en la vía de ensayo, a que muy prudentemente fué sometida mi iniciativa, y, más tarde, en la práctica definitiva; lo cual haré sin omitir la única observación que en contrario formuló una sola de las directoras de las cuatro escuelas en que se realizó el ensayo. Consistió tal observación en que resistiéndose los padres de familia a enviar a sus niños a esas escuelas por solamente dos horas, disminuía la asistencia media, puesto que los mandaban a las escuelas de horario completo; pero bastóme para destruir tal observación, la siguiente manifestación que hice a esa directora:

¡Pobres de los maestros el día que las autoridades escolares les impusieran todo lo que en materia de retener a los niños en las escuelas, pidan los padres, pues no les

dejarían horas de descanso, ya que la tendencia es a que el maestro se encargue de los niños mientras ellos trabajan y aún mientras gozan de los pasatiempos. Y en cuanto al retiro de los niños, desaparecería así que se generalizara la reforma, desde que no existiendo ya escuela alguna con horario completo para los niños de primer año, no tendrían los padres a donde trasladar a sus hijos!

En cambio, los buenos resultados, obtenidos con tal reforma, son los siguientes:

Primero. Desde los ensayos se comprobó que, tratándose, como se trata, de la clase o año escolar en que es más requerida la individualización de la enseñanza; y siendo así que tan importante regla pedagógica no era posible cumplirla con el horario completo, por tratarse de clases de 60, 80 o más alumnos; con la reducción del horario a la mitad, se reducía también a la mitad el número de los alumnos que concurrían a cada uno de los dos turnos; por lo cual se haría posible individualizar la enseñanza en esa clase, cimiento de la escuela. Ese sólo resultado del "medio horario del noviciado escolar" sería suficiente a recomendarlo como imprescindible.

Segundo. Tanto los ensayos como la generalización de tal reforma, comprobaron: que la desesperante y desgastadora situación del maestro en las últimas horas de clase del horario completo, desaparecieron desde el día en que él comenzó a trabajar con el "medio horario," o sea con elemento descansado que aprovechaba sus lecciones. Aparte de esto, la reforma proporcionaba al maestro media hora de descanso entre un medio horario y otro, en la que recuperaba las fuerzas perdidas.

Tercero. Los niños, como ocurría que en las dos últimas horas del horario completo, poco o nada aprendían, resulta hoy que por el "medio horario," aprenden tanto como antes sin esfuerzos desgastadores e inútiles.

Cuarto. Sabiéndose, como se sabe, todo lo importante en proyecciones que es el hecho de que al alumno concurra con placer a la escuela, tanto respecto a su salud como a su instrucción y educación; y teniéndose en cuenta todo lo incómodo que resultaba a los padres de familia el horario completo, los niños han tenido, necesariamente, que concurrir con mayor gusto desde tal reforma y, hasta retirándose con deseos de volver.

Quinto. Con la generalización a todas las escuelas de primer grado, sometidas al "medio horario," ha tenido que desaparecer de raíz—como ya lo había yo anunciado—la primera y única objeción que se ha hecho a tal reforma, desde que no tenían los padres escuelas o clases para los novicios, de horario completo. Y en cuanto a los que aceptaron tal reforma desde su comienzo, están orgullosos de que sea nuestro país—que es el más joven de Sud América, y que no cuenta ni un siglo de existencia—el que haya conquistado la verdad en tan importante materia.

Sexto. La parte física o vegetativa del niño, ha sido, como se comprenderá, la favorecida más directamente por la innovación, desde que el día le deja libre mayor tiempo para su gimnasia natural, jamás reemplazada artificialmente, con lo cual no sólo ganan los niños, sino también los padres, las familias y la sociedad entera.

CONCLUSIÓN.

Como transacción o conciliación en la vieja cuestión entre pedagogistas e higienistas, sobre la edad más indicada para el ingreso del niño a la escuela—si los seis años o los nueve—proponemos por los apuntados fundamentos: que se opte por los seis años, a condición imprescindible de que durante el primer año, o sea el del noviciado del niño, se reduzca el horario general de la escuela a la mitad, para esa clase de primer año solamente, debiendo ser dividido el número de alumnos de esa clase en dos grupos, por mitad: en uno, los niños más crecidos, y en el otro los menores, a efecto de que los primeros concurren siempre a las horas, de cada estación, que resulten más incómodas, y el grupo de los menores, a las horas más cómodas. Bien entendido que hablo de las escuelas urbanas y de las rurales muy próximas a los centros de población (ciudades o pueblos); ya que en las demás escuelas rurales los niños pequeños sólo pueden concurrir a la escuelas, dadas las grandes distancias, y retirarse de ellas acompañados de los alumnos mayores; en cuyas escuelas el año del noviciado puede cursarse con un descanso de una o media hora a la mitad del horario completo.

¿CUÁL ES LA MANERA MÁS EFICAZ PARA PREPARAR A LOS PROFESORES ELEMENTALES DE LAS ESCUELAS DE CADA CLASE?

Por MARIANO PEREIRA NÚÑEZ,

Miembro de la Dirección General de Instrucción Primaria del Uruguay.

Este tema es tan de mi predilección, que, sin temor de equivocarme, puedo asegurar: que él ha sido el que constantemente—primero como propagandista, y más tarde como miembro de la Dirección General de Instrucción Primaria—me ha preocupado, en el sentido de buscarle solución eficaz que creo, al fin, haber hallado en la forma, bastante original, por cierto, en que la someto a la consideración de este ilustrado congreso; no sin adelantar, desde luego, que precisamente lo hago tendiendo a abrirle camino en el ánimo de los señores congresistas, a efecto de que, cuando menos, no me lo rechacen por la primera impresión, o sin dedicarle la debida meditación, siquiera sea por tratarse de asunto tan complejo e importante.

Nací en el año de 1844, en el seno de una familia de dos generaciones de profesores: la abuela, y la paterna.

De la generación paterna, dice Araujo, que mi padre fué el primer joven uruguayo que se dedicó al magisterio, pues los demás habían sido y eran extranjeros, casi todos españoles. Mi madre—maestra preparada en la más adelantada escuela argentina, y sucesora de la beata "Rosita" (como ésta se dejaba llamar buenamente)—murió, según los papeles de la familia, a los 26 años de edad, sacrificada a la escuela.

Muchos años después, cuando yo cursaba ya la carrera del foro y contaba 24 años, ocurrió que José Pedro Varela inició en el país la obra de la reforma escolar, a base de la escuela norteamericana, y, como recurriera el reformador al auxilio de la acción privada, para ensayo de su obra, creó la Sociedad del "Amigo de la Educación Popular," a que yo debo haberme apurado mucho a ingresar, puesto que conservo mi honroso diploma de socio fundador, y figuro firmando el acta inaugural; paso que lo dió también el Dr. Carlos María de Pena, actual representante diplomático de mi país (el Uruguay) en los Estados Unidos.

Durante la labor que nos encomendó esa sociedad, o el Reformador, nos ocurrió—también a ambos—que separadamente el Gobierno o la primera autoridad escolar nos confiara, durante nuestras vacaciones escolares, las inspecciones de las escuelas elementales de los departamentos del Durazno, Salto y del grupo de los Departamentos Minas, Maldonado y Rocha, respectivamente, al Dr. Pena, al pedagogo, Don Francisco Z. Berra, y a mí, sin proporcionarnos más que los pasajes.

Habiéndome confiado, algún tiempo después, la función de juez letrado del Departamento de Soriano, a cuya capital (Mercedes) tuve que trasladarme, permaneciendo allí 18 años, pude efectuar, además de una frecuentísima intervención directa en las escuelas públicas, desde el cargo de miembro de la Comisión Departamental de Instrucción Pública, las siguientes obras escolares, originales y personalísimas, con el carácter de propagandista escolar; pues considerándome discípulo de Varela, me propuse suplirlo en alguna de las muchas fases del ancho campo de sus predilecciones que también eran atávicas en mí.

El, en sus pocos años de vida no tuvo ocasión de conocer bien la educación que el Gobierno llegó a conferirle cuando su existencia se encontraba minada. Como únicamente conoció el Departamento de la capital del país en que había nacido y vivido siempre, fué por donde comenzó la reforma y fué en él donde planeó y sometió a programa la escuela urbana. Pero faltóle el tiempo para estudiar las necesidades inherentes al campo, a los barrios y a las escuelas rurales, tanto o más importantes que las urbanas, como foco único de civilización y de progreso en esos lugares.

A ese serio problema, pues, dediqué toda mi atención como propagandista en ocasión de un movimiento popular iniciado en Montevideo, en donde se invitó a los pueblos del interior para fundar el mayor número de escuelas, de los grados necesarios, en los campos de la República.

Al efecto, y con el carácter de presidente del Comité Departamental, acometí esa obra; pero, no dejándome sugestionar con los primeros donativos que nos habrían proporcionado el triunfo de ser los primeros en fundar escuelas; pues lo que yo me había propuesto desde el principio era concretarme a buscar una forma eficaz permanente de llenar, en lo posible, de tales escuelas todo el Departamento. Tal estudio—que no tuvo otro fin que el de idear y combinar un plan de escuelas apropiado al medio rural, sencillo y económico, que permitiese a los habitantes enviar a sus hijos a ellas—me requirió tres años, de estudio sobre el terreno, el cual estudio confirmó en mi ánimo la presunción de que la despoblación de las escuelas públicas se debía únicamente a que se aplicaba a las rurales el mismo y único plan de las escuelas urbanas; puesto que cuatro o cinco años después habíamos fundado mayor número de esas escuelas, las cuales eran mucho más concurridas que las que había logrado crear el Gobierno en 24 años; con la circunstancia, muy apreciable, de que como nuestras sencillas y económicas escuelas que funcionaban en el seno de una casa de familia educada, acomodada y laboriosa, proporcionaban al niño la buena, la conveniente estética que se grababa en su alma como ideal de su vida de hombre; o, en otros términos, nuestras escuelas eran más civilizadoras que la escuela pública situada, por lo general, en un pobre rancho, sin los plantíos, montes, granjas o viñedos, con que contaban nuestros edificios escolares, además del “confort” y la educación de una familia ejemplar.

Otra obra de varón que me cupo en suerte presidir como propagandista, muchos años en dicha ciudad, fué la siguiente: En una ocasión en que se morían de hambre los maestros del Estado, debido a no percibir sus sueldos durante año y medio, convocamos al pueblo y reunimos un capital que permitió anticiparles sus sueldos desde entonces, a la par y con toda puntualidad, lo cual fue como un renacimiento para ellos. Tal servicio a los maestros, prestado mes a mes, sin interrupción de un sólo año, duró un cuarto de siglo; siendo digno de mencionarse que tal esfuerzo, exigido al pueblo, no interrumpió, ni un solo día, la fundación de escuelas populares cuyo rubro era debidamente servido.

Y, por último, habiendo resuelto regresar a Montevideo, no pude todavía rehusar el aceptar la delegación que al embarcarme dióme aquel buen pueblo, entregándome la bandera de Artigas, en la cual se lee la inscripción de su segunda insignia: “Sean los orientales tan ilustrados como valientes,” de que me había yo servido para alentar a los vecindarios, con la mira expresa de propagar y poner en ejecución en todo el país, especialmente en el campo, el plan de escuelas rurales allí creado; en cumplimiento de cuyo mandato, después de recorrer dos veces el territorio nacional, propagando por medio de conferencias, y organizando sociedades, solicité y obtuve del Gobierno, en que era Ministro de Instrucción Pública, el propio Don Carlos María de Pena, el apoyo oficial, consiguiendo que ese Gobierno anunciara a la Dirección General que ponía a disposición de ella \$20,000 para obras de tal naturaleza.

Considerando ahora lo suficientemente abonada mi persona y mi palabra, entraré de lleno en el tema con el copioso número de verdades axiomáticas y educacionales, pertinentes al tema, cosechadas en esa larguísima labor que paso a citar, por considerarlas la base más sólida en que deben descansar mis opiniones acerca del método más eficaz que hay que seguir para obtener el debido perfeccionamiento del profesor de las escuelas elementales.

Primera. Toda tendencia educadora de cada época, tiene y debe tener por finalidad, la preparación del niño para la próxima labor de hombres.

Segunda. El maestro es videntemente el molde en que entrando como materia prima el niño actual, se funden las futuras generaciones de hombres. De manera, pues, que si queremos asegurar la perfección de tales generaciones, es cosa capital perfeccionar al maestro.

Tercera. El buen sentido aconseja la inmensa necesidad que hay de conservar ese molde sin abolladuras o deformaciones, puesto que si él es deficiente, resultan deficientes las generaciones futuras.

Cuarta. En todos los países, una generación deformada acarrea gravísimos daños; pero en los países en que no se cree que los gobernantes caen del cielo, y se ha resuelto elegirlos de entre los ciudadanos, como ocurre en los pueblos democráticos, las generaciones deficientes lo trastornan todo completamente, porque la democracia pura está cimentada en la virtud y en el talento de los hombres.

Quinta. La América, como tierra virgen dada a la humanidad para que preparara la semilla de la verdad, cuando las tierras del viejo continente estuvieron completamente contaminadas con los gérmenes de los prejuicios, es por ello, naturalmente democrática. Luego en ella las generaciones deficientes producirían un mal continental.

Sexta. Es notorio que a los miembros del magisterio o del profesorado elemental, que son y tienen que ser personas de ejemplar conducta que deacuellan del nivel intelectual de la generalidad de los hombres, los vemos, muy raras veces, darse el lugar que les corresponde en la sociedad; pues en general, están, muy distantes de la gran altivez amorosa que debiera distinguir y caracterizar a esas milicias de la civilización; civilización que tiende la línea de sus fuegos en todos los países del mundo. Constituye tal detalle un serio mal que es necesario remediar ¿Cómo? Esa es la cuestión, muy acertadamente planteada por el Comité Ejecutivo que tuvo a su cargo la redacción del reglamento de este congreso; y ese es el tema elegido por mí, por considerar que se refiere directamente a la preparación que debe exigirse, o más propiamente, darse, al maestro.

No encontrándole otra explicación a ese apocamiento que padece el maestro al tratar de escalar con sus talentos y sus virtudes (únicos títulos existentes en la democracia) el puesto que con justicia le corresponde en la sociedad moderna, me he inclinado siempre a encontrar la causa en la inconsciencia, de la gran mayoría de los maestros, acerca de la elevadísima misión que les está exclusivamente confiada en todos y cada uno de los países. Y conocido por mí ese mal, me ha resultado posible ver que lo adecuado es buscar la forma más eficaz de dar al maestro ese claro concepto que le falta de los altos méritos de su labor.

En cuanto a la época y procedimiento que hay que seguir para encontrar el resultado deseado, debe necesariamente considerarse que lo indicado es la época y el programa marcados para su preparación profesional, programa en que, a mi juicio, existe una gran laguna engendradora de dicha retracción del maestro, que consiste en que los preparadores de maestros no se preocupan más que de nutrir su cerebro del mayor número de conocimientos, sin preocuparse de lo que constituye la médula de la profesión del magisterio, que es la de inyectar en el alma y en el corazón de los aspirantes, algo de ese fuego sagrado que se necesita para toda obra que por su naturaleza imponga sacrificios; alentándolos, al mismo tiempo a perseverar en lo meritorio de la obra. Esto es tan practicable, en mi concepto, que yo mismo, que no soy maestro, lo vengo efectuando con visible éxito en mi carácter de propagandista, nada reñido con el de miembro de la Dirección General, por medio de la simple recitación de las estrofas de mi canto, "Estímulos," correspondientes a cada clase de situación del maestro de escuela rural, que vive aislado sin que nadie lo aliente:

Los que lleváis al apartado campo
 La débil luz de vacilante antorcha,
 Que remeda el zig-zag de los relámpagos
 En medio de una noche tormentosa;
 Y desde la escarpada serranía
 Proyectáis esa luz por sus senderos,
 Y entonces parecéis un gran brillante
 Engastado en las crestas de los cerros;
 Cuyos rayos de luz lleva el alumno,
 Del foco luminoso de la escuela,
 Al rancho oscuro en que al fin, consiguen
 Horadar las tinieblas que lo envuelven.

La manera más natural e indicada para atacar ese mal de raíz y, por consiguiente, la que considero más eficaz (que es tras la cual va la pregunta del Reglamento del Congreso) es la siguiente: ampliar el programa de preparación de maestros con un número destinado exclusivamente a imprimir en el corazón y en el alma del aspirante el más claro y elevado concepto de la carrera a que se dedica, número que deberá ser también incluido en los temas de los concursos y en las pruebas de competencia.

Pero como ese remedio sólo es aplicable a los futuros aspirantes que cursaran la carrera, resultaba, en mis cálculos educacionales, que dejaba sin remediar ese mal en los millares y millares de maestros que ya actúan en todo el continente americano; y entonces se me ocurrió que debía de aplicárseles una inyección más activa al respecto, y después de recordar las tres formas de propaganda que podía hacerseles: la de conferencias, la del libro o el folleto y la del verso, me decidí por esta última, por la circunstancia de haberla usado ya, con el referido éxito, en mi labor de propaganda escolar; resultado debido sin duda alguna a que es menos fugaz o más duradera en su efecto, que de la palabra hablada; que es menos pesada y olvidadiza que la del libro; y que es la forma que más y mejor habla al alma. Se me ha prevenido que la frialdad y el cálculo profundo del habla inglesa acogería como frívola mi ocurrencia de recurrir a la poesía en asunto tan serio, y haciendo justicia, he contestado: es más que suficientemente instruido el pueblo a que va dirigido mi canto, que sabe que al poeta recurrían ya los pueblos para enardecer las milicias y salvar la patria; que el gran poeta francés sacudió con sus versos el corazón de la Francia en su preparación para sus grandes destinos. Y, finalmente, que un poeta es el que acaba de determinar el alma de la Italia a lanzarse en medio de una hoguera de trescientos kilómetros en que ya se han incinerado más de un millón de cadáveres humanos.

CONCLUSIÓN.

El apocamiento de los maestros que se quiere evitar para que no contamine a las generaciones que se forman debe combatirse de dos maneras:

Respecto de los nuevos aspirantes a maestros por medio de un nuevo número del programa, destinado a dar al aspirante el temple en altivez amorosa que necesita transmitir a las futuras generaciones, lo que se conseguirá, en gran parte, con el convencimiento de la verídica importancia de su elevadísima misión.

Y respecto a los ya maestros, por la propaganda sobre las grandes proyecciones de su noble labor, propaganda por medio de conferencias por el libro, y principalmente por los cantos y los himnos que, aun para los futuros maestros, tendrán aplicación recordatoria de aprendizaje, puesto que deberán formar número obligado desde luego, de todas las fiestas públicas de cada escuela.

¿CUÁLES SON LOS ELEMENTOS DE UNA LEY EFECTIVA SOBRE ASISTENCIA OBLIGATORIA EN LAS ESCUELAS?

Por EMILIO FOURNIÉ,

Montevideo, Uruguay.

Actualmente, entre nosotros, la cuestión que en materia educacional dista más de acercarse a lo que debiera ser, es la del cumplimiento de la obligación escolar pues las disposiciones vigentes son defectuosas. Si sólo tuviera presente que la ley sobre la materia en los Estados Unidos de Norte América donde tiene lugar el Congreso Panamericano, es muy completa, no intentaría escribir sobre el tema propuesto; pero, por una parte la importancia de la cuestión, y por otra la declaración hecha al respecto en el programa preliminar del Congreso, diciendo que "la experiencia

de un país en este particular interesa muchísimo a los otros," hace que me incite a tratar el punto, aun cuando la experiencia de nuestro país no puede aportar otro contingente que la convicción de la necesidad de una ley efectiva sobre asistencia escolar, desde que los preceptos legales en vigencia son muy deficientes.

La Ley de Educación Común, promulgada el 12 de enero de 1885, se ocupa de la obligatoriedad de la enseñanza en sus artículos 20 al 23 en estos términos: el artículo 20 establece que es obligatoria la enseñanza donde existan escuelas en relación a las necesidades de la población; el artículo 21 dice: "El que sin causa legal y justificada deje de cumplir lo prescrito en el artículo anterior, será amonestado por la primera vez, y en caso de reincidencia pagará una multa de 12 pesos por cada alumno la segunda vez, y 24 pesos por la tercera, destinándose esas multas exclusivamente al sostenimiento de la Escuela Normal." El artículo 22 establece "que los niños que no concurran a escuelas públicas podrán recibir instrucción en escuelas privadas o en el domicilio de sus padres, pero deberán éstos acreditar esa circunstancia en debida forma ante el inspector departamental, quien les expedirá un certificado de haber llenado ese requisito." El artículo 23 dice que "las Juntas Ejecutivas Administrativas y sus Comisiones Auxiliares, a solicitud del Inspector Departamental y por medio de éste, acompañado de dos vecinos harán las amonestaciones y la aplicación de las multas de que trata el artículo 21; pudiendo, en caso necesario, requerir el auxilio de la fuerza pública."

En la primitiva Ley de Educación Común de septiembre de 1877 se establecía (art. 52) que la Dirección General de Instrucción Primaria reglamentaría la ley, y aquel reglamento, si bien no se refiere a la ley vigente, se toma como norma de conducta en cuanto no se oponga a la nueva ley. En la referida reglamentación se subsanaban algunas deficiencias—sobre este punto eran idénticas las leyes de 1877 y 1885—estableciendo el radio del distrito escolar en los centros urbanos (4 kilómetros para los varones y 2 kilómetros para las niñas) y en los distritos rurales se dejaba librado a las subcomisiones la determinación del radio, que podía variar con las circunstancias locales; también se marcó (art. 14) como límite de la obligación escolar, la edad de seis a catorce años para los niños de uno y otro sexo; en el artículo 15 se establece la obligación del padre, tutor o encargado de inscribir a sus hijos o pupilos en un registro independiente de la matrícula y con el cual se formaría el censo escolar; quien no cumpliera con esa obligación incurriría en la multa de un peso por cada niño; el artículo 18 dice que la Comisión Departamental o Subcomisión, con el Inspector, decidirán de la validez o nulidad de las causas interpuestas para eximir a un niño de la obligación escolar.

Por resolución de enero 11 de 1882 se salva otra deficiencia de la ley y reglamentación, que no establecían el límite de la obligación en cuanto a conocimiento; se determinó que en los distritos rurales la obligación escolar importaba cursar los estudios desde la primera a la sexta clase, y en los centros urbanos de las clases primera a octava.

En octubre de 1883 la Dirección General marcó el procedimiento a seguirse en cuanto a intimaciones, amonestaciones y multas que correspondían aplicar a los padres omisos; pero se le dió a esta resolución un carácter provisorio esperando conocer las observaciones que hicieran los inspectores de escuelas y no se resolvió, sobre todo, una cuestión dudosa como era el alcance que podía darse a lo dicho en el párrafo final del artículo 23 de la ley que dice: "Pudiendo, en caso necesario, requerir el auxilio de la fuerza pública." ¿Como debería entenderse ésto? ¿Importaba establecer que a falta del pago de la multa correspondería la prisión equivalente, como expresamente se dice en un reciente proyecto de Ley? Esta duda no ha sido aclarada hasta hoy.

Más adelante, en vista del resultado nada favorable obtenido hasta entonces para llevar a la escuela a los niños sin instrucción, la Dirección General resolvió en agosto 28

de 1891 dirigirse a las Comisiones Departamentales incitándolas a que emplearan otros medios para alcanzar el fin deseado: Excitar el celo y patriotismo de las Subcomisiones y maestros haciéndoles ver la conveniencia de acercarse a los vecinos y aconsejarles que manden sus hijos a la escuela; dirigir a los habitantes del departamento una exposición inculcándoles las ventajas de la instrucción y recordándoles las disposiciones legales; dirigirse en igual sentido a los vecinos de más prestigio y arraigo en cada localidad; buscar la buena voluntad de ayuda, con el mismo objeto, de los jefes políticos, comisarios, y jueces. Terminaba la resolución diciendo: "Sólo después de agotados sin resultado, todos los medios persuasivos a que hayan recurrido, procederán las Comisiones Departamentales a hacer uso de los coercitivos que autoriza el artículo 21 de la Ley de Educación Común.

Con esta última resolución que hacía intervenir un medio importantísimo como es llevar al ánimo de los padres el convencimiento de las ventajas que reporta la instrucción, factor sin el cual la propaganda a favor de la escuela resulta deficiente y desprovista de la fuerza capaz de hacerla un centro de afecto entre maestros, padres y alumnos. La prueba de esto se tiene en los resultados efectivos alcanzados en algunas escuelas donde el maestro se distingue por su habilidad en atraerse la voluntad del vecindario; que es capaz de interesarlo por la escuela y los beneficios de la enseñanza; que haciendo de su profesión un verdadero apostolado, alcanza, como dice Le Bon en su obra *Psicología de la Educación*, el secreto del feliz éxito obtenido por las escuelas de instituciones religiosas.

Ese conjunto de disposiciones sueltas sobre asistencia escolar, ha servido para desesperar a todos los que en alguna forma son responsables de la marcha del mecanismo escolar: maestros, inspectores, comisiones departamentales, todos reconocen la urgente necesidad de reformar la Ley en el sentido de hacerla más práctica, más realizable, más útil. Uno de los defectos más notables de la ley vigente en la cuestión que trato, está en que sólo se ocupa de la inscripción, como si con este requisito fuera suficiente para que el niño obtenga los beneficios que debe proporcionar la escuela, para alcanzar su verdadero fin. Verdad que hay disposiciones escolares que determinan la eliminación del alumno, que sin aviso, o sin causa justificada, no concurre durante diez días hábiles consecutivos; pero esto mismo sirve nada más que para burlar fácilmente la intención del legislador: un padre recibe el apercibimiento de que será castigado con arreglo a la ley, si no cumple con la obligación de mandar su hijo a la escuela; y entonces lo matrícula, y también lo manda algunos días, después no concurre más, y a los 10 días es eliminado de la lista; el maestro da cuenta del hecho al Inspector de escuelas, quien lo comunica a la Junta Ejecutiva Administrativa y ésta a la Comisión Auxiliar respectiva, para volver al trámite de la amonestación y apercibimiento; apremiado nuevamente el padre, vuelve a mandar su hijo a la escuela en la forma deficiente de la primera vez, hasta que el maestro y autoridades concluyen por abandonar su acción vista la ineficacia de los esfuerzos.

La sola enunciación de estos hechos que reflejan la realidad, basta para comprender porqué es tan crecido el número de niños que no reciben instrucción, y asimismo, porque razón la asistencia media y la inscripción son tan malas como se verá por los datos siguientes:

Analfabetos.—El número de niños analfabetos en edad escolar disminuye progresivamente, pero no es fácil establecer a cuanto queda reducido, porque el último censo levantado en el país, además de ser de 1908, comprendía los niños analfabetos en las edades de cinco a catorce años, siendo así que la reglamentación de la Ley de Educación Común establece como edad escolar la de seis a catorce. Por otra parte, son muchos los niños que se retiran de la escuela antes de terminar su instrucción, ni aún la que podrían recibir en la escuela primaria elemental, y sin embargo no pueden considerarse como analfabetos; de manera que aún aplicando los cálculos corrientes para tales casos, seguramente que el número de analfabetos es menor que el consignado a continuación.

La población de la República en 1914 era de 1,315,714 correspondiendo 263,142 niños como población escolar de los cuales asistían a escuelas públicas y privadas 114,946, quedando 148,196 sin ir a la escuela; pero de esta cantidad el 25 por ciento, probablemente más, puede considerarse que sale de la escuela antes de tiempo con alguna instrucción, o si no que recibe instrucción en su casa, lo cual daría una diferencia de 111,147 niños analfabetos o sea el 42 por ciento de la población escolar. Tomando la misma proporción que arrojaba el censo de 1908 entre analfabetos niños y adultos, resulta que si la cantidad de aquellos era 42 por ciento, la de estos sería 29.45 por ciento, y el porcentaje de analfabetos de seis años en adelante resultaría, aproximadamente, 35.72 por ciento.

La cantidad de niños analfabetos en edad escolar, por departamentos, correspondientes a 1914 y haciendo el cálculo aproximado como en el caso anterior, es como sigue:

Departamentos.	Habitantes.	Población escolar.	Niños analfabetos.	Porcentaje.
Montevideo.....	304,343	72,368	18,903	25.94
Canelones.....	107,068	21,413	10,402	48.57
Maldonado.....	37,125	7,425	3,627	48.84
Rocha.....	43,309	8,661	3,487	40.26
Treinta y Tres.....	37,192	7,438	3,627	48.71
Cerro Largo.....	54,005	10,801	5,259	48.69
Rivera.....	43,342	8,668	3,790	43.61
Artigas.....	36,840	7,368	3,626	49.85
Salto.....	66,493	13,299	7,073	53.19
Paysandú.....	60,512	12,102	5,949	49.15
Río Negro.....	33,529	6,706	3,231	48.19
Soriano.....	51,413	10,282	5,055	49.16
Colonia.....	74,458	14,891	6,781	45.54
San José.....	57,011	11,412	5,509	48.31
Flores.....	21,562	4,312	1,965	45.57
Florida.....	56,917	11,383	5,854	51.42
Minas.....	62,920	12,584	6,424	51.05
Durazno.....	51,737	10,347	4,990	48.22
Tacuarembó.....	56,438	11,287	5,607	49.67

Aquí también aparece Montevideo como el Departamento que está en mejores condiciones, y Salto en las peores, teniendo en cuenta el número de analfabetos; los demás Departamentos se encuentran en este orden: Salto, Florida, Minas, Artigas, Tacuarembó, Soriano, Paysandú, Maldonado, Treinta y Tres, Cerro Largo, Canelones, San José, Durazno, Río Negro, Flores, Colonia, Rivera, Rocha, Montevideo.

Además de las consideraciones anteriores que justifican lo aseverado de que el número de niños analfabetos debe ser menor que el encontrado por los cálculos corrientes, hay también la presunción de que el número de analfabetos adultos sea mucho menor que el asignado, puesto que desde 1908 en que se levantó el último censo general en todo el país, han progresado como para marcar notable diferencia dos instituciones de carácter educacional: los cursos nocturnos para adultos y los cursos militares de instrucción primaria. Con respecto a la inscripción y asistencia media transcribo a continuación los párrafos de un informe que en mi carácter de Jefe de Estadística Escolar presenté a la Inspección Nacional de Instrucción Primaria analizando algunos resultados obtenidos en los últimos años. Decía así:

"El número total de alumnos inscritos en escuelas públicas y privadas en cada Departamento, comparado con el de habitantes en 1914, arroja el porcentaje que indica el cuadro siguiente en donde se vé que los mejores Departamentos son Montevideo, Rocha, Rivera, Colonia, Flores, Río Negro, Durazno, y los que están en peores condiciones Florida y Salto; resulta asimismo que Montevideo con 13.08 por ciento de inscritos, educa en proporción a sus habitantes más del doble número de niños que Salto con 5.82 por ciento. La situación de la República en 1914, con 1,315,714 habitantes y 114,946 alumnos en escuelas públicas y privadas, da el 8.74 por ciento de educandos comparados con la población."

Departamentos.	Pobla- ción.	Alum- nos.	Porcen- taje.
Montevideo.....	364,343	47,664	13.06
Canelones.....	107,068	7,544	7.05
Maldonado.....	37,125	2,589	6.96
Rocha.....	43,309	4,012	9.29
Treinta y Tres.....	37,192	2,603	7.00
Cerro Largo.....	54,005	3,791	7.02
Rivera.....	43,392	3,628	8.37
Artigas.....	36,340	2,435	6.70
Salto.....	66,493	3,868	5.82
Paysandú.....	60,512	4,170	6.89
Río Negro.....	33,529	2,398	7.15
Soriano.....	51,413	3,543	6.89
Colonia.....	74,458	5,850	7.86
San José.....	57,011	4,057	7.12
Flores.....	21,562	1,692	7.85
Florida.....	56,917	3,578	6.29
Minas.....	62,920	6,019	6.39
Durazno.....	51,737	3,694	7.14
Tacuarembó.....	56,438	3,811	6.75

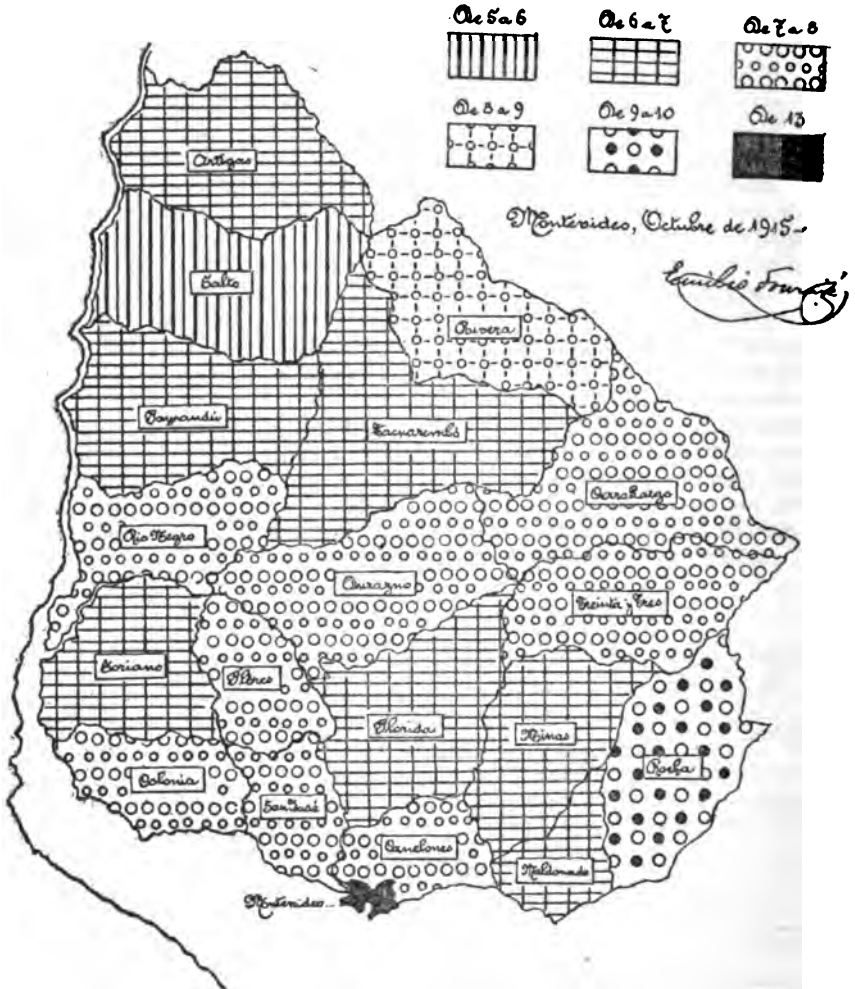
Sin embargo, lo expuesto no indica la verdadera condición de cada departamento en el sentido estudiado, porque no todos están poblados con la misma densidad, y así sucede que si Montevideo con 664 kilómetros cuadrados de superficie tiene como densidad de población 548.71, Tacuarembó con 21.015 kilómetros cuadrados sólo tiene 2.69 como densidad de población y en consecuencia, no es extraño que en el primer Departamento haya el doble de educandos en relación al número de habitantes que en el segundo, cuya población se distribuye en dilatadas comarcas, donde los niños no siempre podrán concurrir a la escuela. En el cuadro siguiente se comparan las densidades de población y de educandos en 1914, obteniéndose cocientes que se aproximan en lo deseable a la situación real de cada Departamento; como se ve por esta nueva comparación hay Departamento que conservan el mismo lugar de superioridad, pero otros no, como resultado de la siguiente ordenación: Montevideo, Rocha, Rivera, Flores, Colonia, Durazno, Río Negro, San José, Canelones, Maldonado, Cerro Largo, Treinta y Tres, Soriano, Paysandú, Tacuarembó, Artigas, Florida, Minas, Salto. No han cambiado de situación los dos extremos en ambos cuadros, que son Montevideo y Salto, conservando la misma proporción entre uno y otro.

Departamentos.	Pobla- ción (den- sidad.)	Alumnos (densi- dad).	Cociente.
Montevideo.....	548.71	71.78	0.131
Canelones.....	25.53	1.59	.071
Maldonado.....	9.03	.53	.070
Rocha.....	3.91	.36	.092
Treinta y Tres.....	3.90	.27	.069
Cerro Largo.....	3.62	.25	.069
Rivera.....	4.41	.37	.084
Artigas.....	3.19	.21	.066
Salto.....	5.28	.31	.059
Paysandú.....	4.57	.31	.068
Río Negro.....	3.96	.28	.071
Soriano.....	5.57	.58	.068
Colonia.....	13.10	1.02	.077
San José.....	8.19	.58	.071
Flores.....	4.77	.37	.078
Florida.....	4.70	.30	.064
Minas.....	5.04	.32	.063
Durazno.....	3.61	.26	.072
Tacuarembó.....	2.69	.18	.067

La asistencia media en su relación con la inscripción, dista mucho de alcanzar un porcentaje ni aún pasable, y menos si se considera el esfuerzo que reclama la enseñanza y que se traduce en un costo relativamente elevado por alumno de asistencia, no porque los servicios escolares estén debidamente atendidos, ni tampoco porque esos servicios sean generosamente retribuidos, sino que la causa del costo elevado reside en la poca inscripción de muchas escuelas, agravada todavía con una asistencia media que, en general, no llega al 75 por ciento.

Descartando las épocas anormales como el año próximo pasado, de crisis económica y extraordinario mal estado del tiempo, ni aquellas en que se ha dejado sentir la influencia de la guerra civil—afortunadamente son ya muchos años que el país lleva

una vida de paz y trabajo—salvo estos casos, digo, las razones que pueden influir en la mala asistencia son, ante todo, la falta de medios de comunicación: malos caminos, falta de calzadas sobre los arroyos y de puentes sobre los ríos, de tal modo que a veces con la menor cantidad de lluvia caída se interrumpe el tránsito, cuando no forman esos arroyos y ríos una amenaza constante contra la vida de los niños, dado la forma en que deben cruzarlos; por otro lado se alega por parte de los padres el estado de pobreza para no enviar sus hijos a la escuela, o para mandarlos irregularmente; esta última razón invocada, salvo épocas especiales como la actual, no tiene



REPÚBLICA O. DEL URUGUAY PORCENTAJE DE NIÑOS QUE SE EDUCAN EN RELACIÓN CON LA POBLACIÓN.

fundamento sino en escasos distritos rurales y entre la gente pobre que vive en los alrededores de los pueblos. Más de una escuela rural lleva una vida anémica porque la pobreza de los padres no permite arreglar sus hijos para mandarlos a la escuela, y sin embargo, en la primera fiesta del lugar, en las reuniones celebradas con motivo de las carreras de caballos, esos mismos niños no faltarán correctamente arreglados, y hasta con lujo para lo que necesitarían con el fin de ir a la escuela; por eso creo que en primer lugar y sobre todo, la falta del mejor aprovechamiento de la escuela pública

radica en nuestra idiosincracia, en la manera de ser de nuestra gente de campo, que con igual indiferencia verán una escuela sin niños, sus casas sin árboles, los campos sin cultivos, y los pocos productos de esos campos sin dar vida a tanta industria que podría ser próspera. Y lo malo es que el movimiento de regeneración, la modificación de hábitos y tendencias, se espera conseguir con la escuela, con esa misma escuela que no consigue educar sino una parte reducida de la población escolar, que aún así no concurre sino también en reducida proporción.

Inscripción y asistencia media de alumnos en las escuelas públicas.

Años.	Inscripción.			Asistencia media.		
	En escuelas urbanas.	En escuelas rurales.	Total.	En escuelas urbanas.	En escuelas rurales.	Total.
1890.....	22,621	16,126	38,747	17,485	10,703	28,189
1891.....	25,233	18,443	43,676	20,087	12,612	32,679
1892.....	26,307	19,646	45,953	20,992	13,547	34,539
1893.....	26,922	19,202	46,124	20,847	12,917	33,764
1894.....	27,481	19,875	47,356	22,299	13,719	36,018
1895.....	28,696	21,316	50,012	22,830	15,071	37,901
1896.....	29,506	21,806	51,312	21,905	14,864	36,769
1897.....	30,580	15,034	45,614	22,085	10,890	32,975
1898.....	31,354	18,379	49,733	21,772	12,873	34,645
1899.....	32,975	19,631	52,606	23,901	14,125	38,026
1900.....	32,997	19,477	52,474	23,822	12,500	36,322
1901.....	33,841	21,535	55,376	24,918	14,334	39,252
1902.....	34,029	22,368	56,417	24,796	13,705	38,501
1903.....	34,030	20,325	54,355	24,635	12,566	37,201
1904.....	31,841	18,509	50,350	21,117	10,509	31,626
1905.....	32,641	20,399	53,040	23,687	13,152	36,839
1906.....	36,184	21,454	57,638	27,145	14,263	41,408
1907.....	36,226	24,637	60,863	27,849	16,458	44,307
1908.....	38,715	30,419	69,134	29,210	20,884	50,094
1909.....	40,491	32,363	72,854	30,550	21,698	52,248
1910.....	41,909	32,808	74,717	31,997	22,109	54,106
1911.....	41,991	40,861	82,852	32,751	28,758	61,509
1912.....	45,217	44,446	89,663	35,986	31,490	67,476
1913.....	46,190	45,556	91,746	36,361	32,204	68,565
1914.....	48,391	46,549	94,940	37,738	31,252	68,990

Analizando la tabla anterior que representa inscripción y asistencia media, se ve que desde 1890 sufren alternativas de aumento y disminución más o menos pronunciadas, hasta que desde 1904 el crecimiento es continuado, del mismo modo como no ha sufrido interrupción la paz institucional. Las dos grandes bajas, en 1897 y 1904 corresponden a dos movimientos revolucionarios, siendo en 1897 la inscripción el 88.89 por ciento y la asistencia media 89.68 del año 1896; en 1904, con respecto a 1903, la inscripción llega a ser 92.63 por ciento y la asistencia media 85.01, y la asistencia media con respecto a la inscripción del mismo año 1904 sólo alcanza a 62.81 por ciento, siendo, en absoluto, menor la asistencia total que los alumnos inscritos de las escuelas urbanas.

Si se compara el aumento que representa inscripción y asistencia en los años de crecimiento, se ve que poco dura el paralelismo y que si se mantiene la inscripción decae la asistencia; se confirma lo dicho anteriormente: entusiasmo o efecto de la novedad por inscribir los niños al primer año de fundada una escuela, y después, falta de constancia para hacer que concurren puntualmente; y así ocurre en 1907 1908; después se ve el mismo fenómeno en 1911 y 1912, llegando este año a una de las más altas asistencias 75.25 por ciento, para bajar en los años siguientes a 74.73 y 72.66 por ciento.

Si se comparan entre sí la inscripción y asistencia de escuelas urbanas y rurales, se ve que la escuela rural marca un progreso importante (lo mismo que sucedió con respecto al número de escuelas) sobre todo desde 1904 en adelante, puesto que si en 1890 la inscripción en las rurales es igual a 71.28 por ciento de las urbanas, y en 1900 esa proporción baja a 59.02, en 1912 llega a 98.29 por ciento y mas aún en 1913 a 98.62 por ciento, siendo por lo tanto muy poca la diferencia entre el total de alumnos inscritos en centros urbanos y rurales; en los dos años anormales 1897 y 1904 la relación antedicha es igual a 49.16 por ciento y 58.13 por ciento.

La asistencia media entre alumnos rurales y urbanos señala mayor diferencia que en la inscripción no sólo porque la naturaleza del medio en que se desarrollan una y otra no es ni siquiera semejante, sino que además todas las razones que influyen des

favorablemente para la escuela rural son benéficas aunque indirectamente, para la escuela urbana, como ocurre en el caso de guerras civiles en que despoblándose el campo, los niños concurren en gran número a las escuelas de los pueblos. En 1890 siendo la inscripción en escuelas rurales 71.28 por ciento de las urbanas, la asistencia media es 61.21 por ciento; en 1900 esas relaciones son 59.02 y 52.47; en 1913, en que se acercan más la inscripción de una y otra categorías de escuelas, la asistencia media es de 88.56 por ciento en las rurales con respecto a las urbanas.

Verdad que nuestra situación no es excepcional entre los demás países de América, y que por el contrario, dado nuestro estado de civilización y la densidad de población, estamos en condiciones muy superiores a otros países. En el Informe del Comisionado de Educación de los Estados Unidos, correspondiente a 1912, figuran los siguientes datos:

Países.	Alumnos inscritos.	Por ciento.
República Argentina, 1911.....	765, 105	10. 67
Cuba, 1911.....	225, 483	10. 48
Chile, 1911.....	258, 875	7. 78
Costa Rica, 1910.....	26, 586	7. 08
México, 1907.....	776, 622	5. 70
Paraguay, 1909.....	40, 500	5. 39
Colombia, 1900.....	200, 965	4. 65
Honduras, 1910.....	22, 745	4. 11
Panamá, 1908.....	14, 505	3. 98
Perú, 1911.....	153, 900	3. 84
Brasil, 1911.....	634, 539	2. 95
Salvador, 1908.....	35, 000	2. 05
Bolivia, 1910.....	46, 000	2. 03
Venezuela, 1909.....	44, 800	1. 64
Uruguay, 1914.....	114, 946	8. 74

Por otra parte, es sabido que la asistencia escolar constituye un problema no resuelto satisfactoriamente para muchos países europeos, y lo prueba el hecho de la sanción de nuevas leyes sobre este tema, modificando antiguos preceptos de acuerdo con las ideas o necesidades creadas por la evolución de la sociedad, en el sentido de hacer más fácil la tarea de educar al pueblo. Así se explica que hayan modificado sus antiguas disposiciones en Francia con la ley de Marzo de 1882; en Italia con la de Julio de 1904 y Julio de 1906; en España con la de Junio de 1909.

Entre nosotros, este año ha sido pródigo en materia de proyectos de ley sobre cuestiones escolares, habiéndose presentado a las Cámaras uno sobre obligación escolar obra del Ministro de Instrucción Dr. Baltasar Brum; un proyecto de reforma completa del organismo escolar, del diputado Dr. Francisco Simón, en el cual trata extensamente lo relativo a obligación escolar; y otro proyecto de reforma del Inspector Nacional de Instrucción Primaria Dr. Abel J. Pérez.

En el proyecto del Ministro Brum se determinan como en la ley de 1885 penas (amonestaciones, multas) para los que no cumplan los preceptos legales, estableciéndose procedimientos breves que permitan hacer efectiva su aplicación; además se determina (art. 5) que a falta de pago de la multa, se impondrá la prisión equivalente; y estas penas no sólo se aplican en el caso de no estar matriculados los niños sino también cuando no asistan con regularidad, teniendo más de cuatro faltas no justificadas en el mes. Asimismo se hace extensiva la obligación escolar a los patronos o encargados de establecimientos agrícolas o industriales con relación a los hijos de las personas que trabajen en sus establecimientos, con lo cual se conseguirá mayor resultado desde que por la condición de las personas será fácil hacer efectivas las multas, o para evitarlas harán presión sobre los padres o tutores de los menores a su cargo. El artículo 12 señala como límite a la obligación escolar la edad de 8 a 12 años para niños de centros urbanos y de 10 a 14 para los que viven en distritos rurales; asimismo se limita en cuanto a conocimientos, al programa completo en las escuelas rurales y el de quinto año para las urbanas, programas que son equivalentes en muchas materias. Por el artículo 15 se establecen premios para los maestros que hayan alcanzado el promedio de asistencia media que anualmente establezca la Dirección General para cada Departamento, y en caso de no alcanzar al promedio de asistencias indicado, se le rebajaría de su sueldo del 10 al 20 por ciento.

El proyecto en cuestión está basado casi exclusivamente en la aplicación de penas, sin tener presente que la obra escolar no es de violencia, y que ésta no tiene efecto sino en pocos casos.

Actualmente, sin pensar en hacer uso de los medios que la ley vigente establece, hay maestros que llevan a su escuela todos los niños del distrito escolar, consiguiendo ésto por los medios aconsejados muy sabiamente en la resolución de la Dirección General de fecha agosto 28 de 1891, antes mencionada. Y son muchas las escuelas rurales que han cambiado por completo su inscripción y asistencia, desde que los maestros o inspectores han conseguido formar comisiones de vecinos que en distintas formas proporcionan vestido y alimento a muchos pobres niños cuyos padres no pueden darles los medios indispensables para concurrir a la escuela.

La ley sobre obligación escolar vigente en Italia, establece que en cada Comuna el síndico hará las amonestaciones del caso a los padres que no envíen sus hijos a la escuela, o si no comprobará el estado de pobreza; pero mejor que estas medidas, dice, será conveniente promover la concurrencia a la escuela por el principio de la beneficencia escolar disponiendo que las Comunas socorran a las familias pobres, siempre que no lo hagan las sociedades de beneficencia, ya sea con alimentos, ropas o libros; por otro artículo se establece que estos gastos deben atenderse con preferencia, salvo los de sanidad.

F. Martí Alpera en su interesante obra "Las Escuelas Rurales," dice:

Aun aquellos países que con más rigor aplicaron la obligación de la enseñanza, primaria, han tenido buen cuidado de no olvidar los medios indirectos, es decir, la acción persuasiva y estimulante del maestro, la atracción de un régimen escolar indulgente y amable, y la cooperación oficial y privada para ofrecer, gratuitamente comida y ropas hechas a los niños pobres, que hicieran posible y fácil la asistencia de éstos a la escuela.

Al presentar al Parlamento, Julio Ferri, su proyecto de ley sobre la enseñanza obligatoria declaró que la ley no podía ser eficaz sin una autoridad local lo más próxima posible a la escuela, y la más dispuesta a la benevolencia en favor del niño. Y el legislador de esta disposición—ley de 28 de marzo de 1882—que establece en Francia la obligación escolar para todos los niños de los dos sexos, de edad de seis años cumplidos a trece años cumplidos, estimaba con Paul Bert, y con el mismo Julio Ferri, que la ley produciría grandes resultados merced a estas dos instituciones fundamentales: las cajas escolares comunales y las comisiones escolares, y que la razón de ser de ellas, estaba en las dos causas esenciales de la no frecuentación y de la asistencia irregular: la negligencia y la miseria.

Las cajas escolares son asociaciones formadas por personas amantes de la enseñanza y de los niños. Su misión es facilitar y estimular la asistencia de los alumnos a las clases por medio de recompensas bajo forma de libros útiles y libretas de la caja de ahorros para los alumnos más aplicados, y de socorros a los niños indigentes o de escasos recursos, ya sea dándoles libros y efectos de enseñanza que ellos no pueden comprarse, ya sea distribuyéndoles vestidos y calzado y alimentos calientes durante el invierno.

Los recursos de las cajas se componen de las subvenciones del ayuntamiento del pueblo a que pertenecen, de la Provincia y del Estado; de las cuotas de los socios y de los donativos, legados, fiestas de beneficencia, etc.

La caja escolar es administrada por un comité presidido por el alcalde y compuesto de miembros de la comisión escolar local y por socios designados en junta general. La comisión municipal escolar, instituida por el artículo 5 de la ley de 28 marzo de 1882 tiene por misión intervenir en las relaciones de la escuela y la familia desde el punto de vista de la frecuentación escolar.

El cantón de Zurich que por tantos y tantos motivos de carácter pedagógico merece nuestra atención y nuestra simpatía, tiene en vigor unas disposiciones relativas a la frecuentación escolar tan severas, que las ausencias no justificadas, contadas por medios días, las castiga con una multa que puede ser de 3 a 15 francos. Llegar tarde tres veces a la escuela equivale a una falta de asistencia. Por tres faltas al año hay apercibimiento; amenaza de multa por seis, y multa por nueve.

Antes de dictar una pena de este género, las comisiones deben informarse acerca de la situación de los interesados. Si la información demuestra que la falta es imputable no a los parientes o tutores, sino al mismo niño, es contra éste contra quien se procede conforme al reglamento disciplinario.

Otra parte que considero deficiente en el proyecto de ley de que me ocupo está en el contralor de la falta de asistencias que no resultaría ni eficaz ni suficiente con lo

establecido en el artículo 4, al decir: "Si los niños no concurren con regularidad a la escuela, los padres, tutores, patrones y encargados recibirán una amonestación, siempre que las inasistencias pasen de cuatro en el mes y no se justifiquen debidamente, a juicio del director de la escuela. Esta amonestación la hará el director de la escuela por intermedio del correo o de sus alumnos y la anotará en un registro especial. El correo hará este servicio gratuitamente. En caso de justificarse la inasistencia, el director enviará al Inspector Departamental de Instrucción Primaria el nombre del alumno y la causal invocada."

Esta inspección debería hacerse diariamente, y por inspectores especiales con facultades hasta para arrestar, si fuera necesario, a todo menor dentro de la edad escolar, que sea encontrado en falta, sometiendo a la acción del juez competente; la función de los inspectores de asistencia merece especial atención y está minuciosamente estudiada en la ley de obligación escolar vigente en los Estados Unidos de Norte América. Y para que la acción de dichos inspectores sea posible en forma eficaz, hay otra cuestión correlativa, entre nosotros no atendida, y es la que se refiere a la fijación del distrito escolar; contrariamente a lo que sucede en las demás esferas de la actividad administrativa, no tenemos las ciudades, ni tampoco el campo, dividida en distritos escolares del mismo modo como lo hay en el orden judicial, y en consecuencia, cada padre envía sus hijos a la escuela pública que más le place, derivándose de ellos infinidad de inconvenientes que no son del caso referir aquí, y entre los cuales estaría el de hacer poco menos que imposible la inspección de asistencia.

En el proyecto general de reforma sobre Educación Común del Inspector Nacional, Dr. Abel J. Pérez la obligación escolar está tratada en tres artículos y en sus lineamientos generales; dejando los detalles, que en esta cuestión son fundamentales, para la reglamentación de la ley, confiados al Director General de Escuelas, Consejo de Enseñanza y Ministro de Instrucción Pública.

En el proyecto de Código Escolar obra del Dr. Simón que, según dije antes, está a estudio de la Asamblea Legislativa, se dedican los artículos 5 a 32 a la cuestión sobre obligatoriedad de la enseñanza, diferenciándose en algunas cuestiones de importancia del proyecto del Ministro, Dr. Brum, pues en los artículos 20 y 30 se hace intervenir el factor propaganda y persuasión en estos términos:

ART. 20.—Los consejos de distrito integrados con los maestros, constituyen comisiones encargadas de realizar propaganda entre los vecindarios con el fin de obtener la mayor concurrencia de niños a las escuelas.

A tal efecto, visitarán y nombrarán comisionados que visiten el hogar de los niños con el objeto de persuadir a los encargados de éstos, de las ventajas de la instrucción.

Debe extenderse esta propaganda de tal modo que se haga sentir la acción personal en todos los hogares de los padres reacios a mandar sus hijos a la escuela.

ART. 30. Las autoridades escolares harán conocer oportunamente a los padres, tutores, etc, por medio de la prensa, circulares, carteles y otros medios, las obligaciones que derivan para estos últimos de esta ley, y las penas con que se castigan sus infracciones.

Prestigiarán también la misión de la escuela y tratarán de persuadir a los reacios de la alta finalidad de la obligatoriedad de la instrucción.

El artículo 9 extiende la obligación escolar hasta las personas mayores de 15 años, diciendo:

Para las personas comprendidas entre los 15 y 21 años, que carezcan completamente de instrucción, existe la obligación de instruirse, ya en las escuelas para adultos o particularmente; pero reducida a leer, escribir y hacer las cuatro operaciones fundamentales de la aritmética.

En esto se asemeja a la legislación italiana vigente—Ley Orlando—de julio de 1906, en la cual se establece la obligación de los adultos analfabetos de concurrir a las escuelas nocturnas o a las dominicales, imponiéndose en caso contrario una pena pecuniaria de dos a veinticinco liras, más otra de carácter moral, que en algunas comarcas italianas es de gran importancia y trascendencia, consistente en no conceder autorización para llevar armas, al joven que no sepa leer y escribir. Una prescripción semejante tendría su importancia entre nosotros, sobre todo en los distritos rurales. Los dos proyectos de ley cuyos preceptos analizo, no toman en cuenta dos aspectos importantes de la cues-

ción, cuales son las circunstancias de que la culpa de inasistencia no sea atribuible al padre sino a desobediencia del hijo e impotencia de aquel para corregirle; ésto que sería una forma de delincuencia infantil prevista en la legislación de Estados Unidos, da lugar al establecimiento de clases o escuelas paternas donde los niños pueden concurrir por espacio de dos años si no son mayores de 16, en cuyo caso pasarían a los reformatorios. El otro aspecto, lo constituye la circunstancia de extrema pobreza o de inmoralidad de los padres; en nuestro país, y posiblemente en todos los de América Latina, es frecuente ver en los alrededores de los pueblos—sobre todo donde hay destacado algún regimiento del ejército—cantidad de familias que viven en ranchos o en casuchas donde la miseria y el vicio se enseñorean del hogar, formando un ambiente impregnado de corrupción, que trae como consecuencia la degeneración desde los puntos de vista físico y moral.

Los niños que viven en estas condiciones suman aquí varios miles, y hasta ellos no han llegado los beneficios de la sabia Ley de Protección de Menores promulgada el 24 de febrero de 1911; sería perfectamente aplicable lo preceptuado en dicha ley sobre pérdida de la patria potestad a instancia de parte, según lo dispuesto en el artículo 2, inciso 6, que refiriéndose a los padres dice:

Si por sus costumbres depravadas o escandalosas, ebriedad habitual, malos tratamientos o abandono de sus deberes, pudiesen comprometer la salud, la seguridad o la moralidad de sus hijos, aun cuando esos hechos no cayeren bajo la ley penal.

Con esos niños que por excepción concurren a la escuela, convendría adoptar medidas radicales desde que sus padres, en casi todos los casos, tienen "costumbres depravadas," hacen "abandono de sus deberes" y "comprometen la seguridad o moralidad de sus hijos;" separándolos de sus padres, que perderían la patria potestad, serían confiados a los comités departamentales y sociedades de patronato, de que habla la Ley de Protección de Menores, y estas corporaciones, cumpliendo con el cometido que les confiere la ley, harían que los niños confiados a particulares, o reclusos en asilos y reformatorios, según las circunstancias, no dejaran de recibir los beneficios que fluyen del cumplimiento de la obligación escolar.

Por todo lo expuesto llego a la conclusión de que los elementos esenciales de una ley sobre obligación escolar, pueden reducirse a los siguientes:

Enseñanza obligatoria: que podrán recibir los niños en escuelas públicas, privadas, o en sus domicilios, y los jóvenes en los cursos de adultos o escuelas particulares.

Asistencia obligatoria: No debe disculparse la inasistencia de un solo día que no sea debidamente justificada.

Distritos escolares: El territorio del Estado será dividido en distritos escolares y en cada uno, sea rural o urbano, habrá un consejo de enseñanza.

Censo escolar: Los padres, tutores o encargados, tendrán la obligación de inscribir en el Registro Escolar Permanente, por una sola vez, a todo niño en edad escolar. La boleta de inscripción justificará haber cumplido ese mandato; y será renovada cuando pase de uno a otro distrito escolar; en este caso el consejo del nuevo domicilio dará cuenta al otro de haber inscrito un niño que antes le pertenecía, para que allí sea eliminado. De este modo, haciendo en cada Departamento un resumen de los inscritos en sus distritos, y en la Capital otro resumen de los Departamentos, se tendría en forma permanente y al día, el censo escolar.

Medios de propaganda y protección: Además del consejo de enseñanza, habrá en cada distrito comisiones de propaganda y protección, que tendrán a su cargo instituciones análogas a las cajas escolares, cantina escolar, copa de leche, etc., con el fin de hacer propaganda entre los padres reacios, persuadiéndolos de las ventajas de la instrucción, a la vez que proporcionándoles medios de alimento, vestido y útiles, para los niños que los necesitan.

Medios coercitivos: Entre éstos se encuentran amonestaciones, multas o prisión equivalente y pérdida de la patria potestad, en cuanto a los padres; en cuanto a los hijos, si éstos fueran los culpables, estaría la detención en clases especiales, reclusión en escuelas paternas, asilos o reformatorios.

Medios de inspección: Es indispensable la creación del cargo de inspectores de asistencia escolar.

Como cuestiones secundarias de una ley sobre obligación escolar, o de su reglamentación, estarían las siguientes:

Extensión del programa que se considere como indispensable conocer, y cómo ha de justificarse haber cumplido con esa obligación, según sea el niño alumno de escuela pública, privada, o sea educado en su domicilio.

Límites de la edad escolar, que debe ser distinta tratándose de centros urbanos o distritos rurales.

La asistencia a las escuelas privadas debe vigilarse del mismo modo que a las públicas. Muchas de las cuestiones referentes a la asistencia escolar, tienen su correlación con la ley de trabajo. Para facilitar la inspección, ningún niño podrá concurrir a otra escuela pública que la de su distrito, y como en cada consejo estará formado el censo escolar con el registro permanente, será fácil averiguar, confrontando con las nóminas que manden los maestros de escuelas públicas y privadas, cuales son los niños que no concurren a ninguna escuela y si en tal caso reciben enseñanza en su domicilio.

Causas que justifiquen la inasistencia, no pueden establecerse sino en sus lineamientos generales, puesto que habrá muchas causas fortuitas de cuyo alcance sólo puede juzgar el Consejo de distrito.

El radio del distrito escolar no puede ser determinado con carácter general por la ley; convendría dejarlo librado al Consejo Departamental que tendrá en cuenta para cada caso, las condiciones locales.

Los consejos de enseñanza, ya sean departamentales o de distrito, podrían estar formados por funcionarios honorarios o con paga, o emplearse una forma mixta; pero las comisiones de propaganda y protección, conviene que en su mayoría sean formadas por funcionarios honorarios, vecinos de arraigo que merezcan la mayor estima y consideración del vecindario.

El registro escolar permanente es independiente de la matrícula escolar, desde que un padre puede cumplir con la obligación de inscribir su hijo en el registro así que llegue a la edad reglamentaria, y después inscribirlo en la escuela pública o en una privada, o no mandarlo a ninguna porque prefiera educarlo en su domicilio.

RESUMEN.

En la República del Uruguay, una de las cuestiones educacionales que con más urgencia reclama modificación, es la que se relaciona con la obligación escolar.

La ley vigente data del 12 de enero de 1885, pero sobre el particular, es idéntica a la de septiembre de 1877; en estos términos: el artículo 20 establece que es obligatoria la enseñanza donde existan escuelas en relación a las necesidades de la población; el artículo 21 dice que quien no cumpla lo preescrito en el artículo anterior será amonestado por primera vez, será penado con multa de doce pesos por cada niño la segunda vez, y con multa de 24 pesos la tercera; para el caso de reincidir en las faltas por cuarta o quinta vez, no se dice nada; según el artículo 22, los niños podrán recibir instrucción en escuelas públicas o particulares, o en su domicilio; el artículo 23 encarga a las Juntas Ejecutivas Administrativas, Comisiones Auxiliares e Inspectores de escuelas hacer efectivas las penas establecidas, y termina así: "Pudiendo, en caso necesario, requerir el auxilio de la fuerza pública."

En reglamentos y disposiciones posteriores se fueron subsanando algunas de las deficiencias de la ley, aunque no todas, ni tampoco se modificó en lo fundamental con ninguna otra ley. En la reglamentación de 1877 se limitó el radio en los distritos escolares (cuatro kilómetros para los varones y dos kilómetros para las niñas), y en cuanto a las rurales, se dejaba librado a las subcomisiones; también se limitaba la edad de los niños comprendidos en la obligación escolar a los que tuvieran de seis a catorce años; el artículo 15 establecía la obligación de padres, tutores o encargados de inscribir a todo niño en edad escolar en un Registro independiente de la matrícula, y con el cual se formaría el censo escolar; el artículo 18 confiere al Inspector de escuelas, Comi-

siones departamentales y Subcomisiones la facultad de decidir sobre la validez o nulidad de las causas que puedan eximir a un niño de la obligación escolar.

Por resolución de la Dirección General de enero 11 de 1882 se establece el límite de la obligación escolar en cuanto a conocimientos: en centros urbanos de primera a octava clase en rurales, de primera a sexta.

En octubre de 1883 la antedicha autoridad escolar marcó el procedimiento a seguirse para efectuar las amonestaciones y aplicar multas; pero, además de ser una resolución provisoria porque se esperaba oír la opinión de los inspectores departamentales, quedaba sin resolver una cuestión de importancia como era la de si correspondía prisión equivalente en caso de que un padre, tutor o encargado, no abonara las multas impuestas.

En agosto de 1891 dejando un poco de lado los medios coercitivos que ningún resultado habían dado—creo que nunca se hizo efectiva una multa—la Dirección General se dirigió a las Comisiones Departamentales aconsejándoles hacer lo siguiente: excitar el celo y patriotismo de las subcomisiones y maestros a fin de que acercándose a los vecinos, les aconsejaran para que manden sus hijos a la escuela; dirigir a los habitantes del Departamento una exposición inculcándoles las ventajas de la instrucción y recordándoles las disposiciones legales; dirigirse en igual sentido a los vecinos de más prestigio y arraigo en cada localidad; buscar la buena voluntad y ayuda de los jefes políticos, comisarios y jueces. Terminaba la resolución diciendo: "Sólo después de agotados, sin resultado, todos los medios persuasivos a que se haya recurrido, procederán las Comisiones Departamentales a hacer uso de los coercitivos que autoriza el artículo 21 de la ley de educación común."

Ese conjunto de disposiciones sueltas no ha dado el resultado deseable, puesto que cuando las autoridades escolares han querido hacer cumplir con sus obligaciones a los padres o tutores remisos, en las deficiencias de las disposiciones han encontrado aquellos, sobrado motivo para excusa o engaño. Consecuencia de todo ésto es que el número de analfabetos no disminuye en la proporción deseable, puesto que en 1914 siendo la población de la República 1,315,714 correspondería según los cálculos corrientes y que están de acuerdo con la proporción que acusaba el último censo, 263,142 niños como población escolar, de los cuales concurrían a escuelas públicas y privadas 114,946, quedando 148,196 sin ir a la escuela; pero de esta cantidad puede considerarse que el 25 por ciento—posiblemente mucho más—son niños que reciben instrucción en su domicilio o que salen de la escuela antes de terminar sus estudios, con lo cual bajaría aquel número a 111,147 niños analfabetos, o sea el 42 por ciento de la población escolar.

La inscripción de alumnos en escuelas públicas, según puede verse en el cuadro gráfico que va intercalado, ha sufrido alternativas de alta y baja, siendo en 1914 el 8.74 por ciento de la población escolar si se considera el número total de inscritos en escuelas públicas y privadas, proporción que con ser reducida puede considerarse buena en comparación con la mayor parte de los países americanos y también con algunos europeos, según los últimos datos publicados en el Informe del Comisionado de Educación de los Estados Unidos; la asistencia media ha seguido más o menos las alternativas en la inscripción, pero sin ir paralelamente desde que los grandes aumentos de inscripción respondieron a la creación de nuevas escuelas, a las cuales concurren al principio muchos niños que después no tuvieron la constancia ni el entusiasmo necesario para que no decayera la asistencia media, que más o menos resulta el 75 por ciento de la inscripción.

Con el fin de corregir todos los males que para la enseñanza se derivan de la asistencia irregular o de la no inscripción de niños, se presentaron a la Asamblea Legislativa en el presente año, dos proyectos de Ley, uno sobre el conjunto del organismo escolar, y otro sobre obligación escolar exclusivamente; entre ambos proyectos de ley tratan casi todas las cuestiones que pueden ser materia de estudio en cuanto se refiere a obligatoriedad de la enseñanza.

Considero que los fundamentos de una ley sobre tan importante cuestión educativa deben ser los siguientes:

Enseñanza obligatoria: Que los niños recibirán en escuelas públicas o particulares, o en su domicilio, y los jóvenes en escuelas para adultos.

Asistencia obligatoria: Que debe comprender tanto las escuelas públicas como las particulares; no debe disculparse ni un sólo día de inasistencia que no sea debidamente justificado.

Distrito escolar: El territorio del Estado se dividirá en distritos escolares, ya sea en centros urbanos como en los rurales; en cada distrito se constituye un consejo de enseñanza.

Censo escolar: Los padres, tutores o encargados de los niños en edad escolar, deberán inscribirlos en el registro escolar permanente que llevarán los consejos de distrito; saliendo de un distrito para domiciliarse en otro, se pedirá la renovación de boleta. En cada Departamento se hará un resumen de los anotados en cada distrito, y en la Capital, con los resúmenes departamentales se formará el censo escolar de todo el país.

Medios de propaganda y protección: En cada distrito escolar habrá comisiones de vecinos de arraigo, que tendrán por objeto contribuir a la mejor asistencia de los niños, para lo cual les proporcionarán, en caso necesario, alimentos, vestidos y útiles escolares; tendrán a su cargo las cajas escolares, cantina escolar, copa de leche, etc.

Medios coercitivos: Lo constituyen las amonestaciones, multas o prisión equivalente y pérdida de la patria potestad, en cuanto a los padres; si los hijos fueran culpables de su inasistencia, serán detenidos en clases o escuelas especiales, o reclusos en reformatorios.

Medios de vigilancia: Se tendrán en un cuerpo lo más numeroso posible, de inspectores de asistencia.

Como cuestiones secundarias que pueden ser tratadas en la ley o en reglamentos, estarían la extensión de los programas cuyos conocimientos se hacen obligatorios, límite de la edad escolar, obligación de que cada niño no pueda concurrir sino a la escuela de su distrito, causas que justifiquen la inasistencia, extensión del radio escolar, y condiciones de las personas que constituyan los consejos departamentales o de distrito.

ADAPTATION OF THE COURSE OF STUDY OF THE ELEMENTARY SCHOOL TO NEEDS OF THE CHILD.

By J. N. DEAHL,

Professor of Education West Virginia University.

No attempt will be made in this paper to summarize what has been done to adapt the program of studies to the needs of the child. The aim will be to present a brief statement of what seems to be a proper adaptation in view of the studies and experiments made by different persons. In order to keep the paper within the limits of the allotted time, the statements will necessarily be somewhat dogmatic.

The child begins life in a state of helplessness. Education undertakes to put it in control of itself and of its environment in as large degree as possible. In general the child needs more of what we call education than it is at present receiving. The claim is here made that a proper adaptation of the program of studies to the needs of the child will secure that increase in education.

That the child may learn more, build more experience, acquire more knowledge during the eight years of elementary school experience, the materials selected for study must be the best, the time allotment to each subject must be the minimum in which the subject may be acquired. This second point—adapting the time allotment of the school subjects to the needs of the child—will be discussed first.

The enrichment of the program of studies in recent years and the recognition for variety in school work have contributed to a deterioration of both learning and teaching and a consequent diminution of education for the child. School administrators and teachers have responded to the new situation—more material for study and more demand for variety in school work—in the customary way—in an unreflective way—by spreading and scattering this abundant material over the elementary school period, to the detriment of the learner.

To meet the above-named situation in a reflective way, it is necessary to keep in mind the end to be attained by the school. In the school the child is to come into possession of usable knowledge, right habits, and the interests developed in the acquisition of the knowledge and habits. The learning process is a slow process. It requires many repetitions or much repeating—identical repeating will secure habit, varied repeating will secure knowledge—a change in subject alone will contribute to neither. The adaptation to secure variety must be provided for by fixing the minimum time allotment for each subject, that more experience may be acquired by the child and a varied method of studying and teaching. The program of studies must be made to contain only the subjects and topics in the subjects most worth while. These subjects and topics must be repeated by varying the method of learning and teaching. In this way there may be variety without confusion on the part of the learner.

In this way the subjects in the program of studies may be adapted to the child. Shorter time and more intensive study. Children in the public schools at the present time are pursuing too many subjects during a single year. In many of our schools pupils in the grades are carrying as many as eight subjects. An adult can not properly and economically carry so many subjects at one time; neither can a little child do so without much waste of time and energy. There is, if it can be found, an optimal time to begin a subject in the grades and a minimum time within which the subject as such should be finished. For example, reading is usually drawled out over eight years. Any normal child can be taught to read in three, four, or five years at most. Then reading as a school subject should stop. To be sure the child will continue to learn to read as long as it remains in school, but it will be incidental to other studies, as history, literature, geography, science, etc. The fact is no one can learn to read except in the subject pursued. Geography, botany, agriculture, etc., must be learned as far as the reading is concerned while the pupils are pursuing these subjects.

Present studies and experiments in the school subject of spelling go to show that the eight years of spelling in the grades are not adapted to the child. Our programs isolate the subject from its proper place for economic learning. Then, too, many words of the unusual kind are attempted. Our programs do not distinguish between the reading vocabulary of the child and its spoken and written vocabulary. It seems we are trying to teach the reading vocabulary of the child for the purpose of spelling, a very wasteful thing. Spelling should be learned in large part incidentally as the child is doing the written work of the school. No subject is adapted to the child unless there is reasonable motive on the part of the child to pursue the subject. Spelling is a motiveless subject when isolated from the written work of the school. The burden rests upon the teacher to invent artificial and driving methods to secure study.

Arithmetic in most schools is still spread out over six to eight years. Is it any wonder it becomes one of the bugbears of the school? All the arithmetic men and women need can be bound in a volume not exceeding 150 pages. How much less do children need? Under proper conditions normal children can learn all the arithmetic that they need as children, possibly as men and women, in the last three or four years of the elementary school. Pupils in the primary grades have little or no need either in school or out of school for arithmetic. Whatever their actual needs may be in any school or community should be supplied incidentally in connection with other subjects and with the situations that may arise. Then the pupils in these grades are not

mature enough, have not had sufficient experience with things and processes in quantitative affairs to feel the need for the kind of knowledge arithmetic furnishes the opportunity to acquire.

In view of these facts and reasons and others that might be given for both form and content subjects, the following time allotment is suggested. In this allotment for the program of studies the year for beginning the subject and the year to end the subject as such are indicated:

- Reading—first to fifth year, inclusive.
- Writing—first to fifth year, inclusive.
- Nature study—first to fifth year, inclusive.
- Drawing and music—first to eighth year, inclusive.
- Arithmetic—fifth to eighth year, inclusive.
- Hygiene and physiology—sixth to seventh year, inclusive.
- Geography—sixth to seventh year, inclusive.
- Literature and language—sixth to eighth year, inclusive.
- History—sixth to eighth year, inclusive.
- Agriculture—eighth year.
- Home economics for girls—eighth year.
- Manual training for boys—eighth year.

This plan or one somewhat like it would permit pupils to pursue their subjects in a more intensive and connected manner. The waste due to forgetting and relearning would be much reduced. It would also permit teachers to give instruction better adapted to the pupils. Referring to reading again, it is quite difficult to secure proper motive on the part of the child to learn to read. The child can be kept at its reading until about the fourth or fifth grade. By this time learning to read has lost its novelty. The child can read passing well by this time. To insure motive for the ensuing years in the grades, learning to read must be changed to reading to learn; the motive must be supplied by the subject—history, literature, etc. During the first years of the grades, room in the program of studies must be made to give the time and emphasis to reading while the child is disposed to be satisfied with learning to read.

Nature study should include all the elementary sciences in the first to fifth grades, inclusive. Elementary science, including hygiene, sanitation, geography, etc., may be better adapted to the child from the nature-study point of view than if textbooks are introduced. Nature study as indicated here should give the child abundant opportunity for sense experience; first-hand contact with things, processes, and social activities of the community should be well planned.

Among the earliest needs of the child is the need for health and growth. Many children come to the school in an abnormal condition. Their eyes are in no condition to do school work; their ears are defective; their air passages in nose and throat hinder breathing and prevent a sufficient supply of oxygen. While this is a situation with which the program deals only indirectly, it is the safest, possibly the quickest, way to correct a grave school problem. At present many localities have medical inspection; the ills of the children are discovered but not cured, owing to the ignorance of parents. It is through the school program of studies that, at least, the next generation may be reached and their children saved from the loss of school opportunities. For this the school program of studies should make ample provision for teaching not only hygiene, but hygiene related to the school life and work of the child. In this way it is adapting itself to a large number of children.

A more direct way in which the program of studies may be adapted to the needs of the child is to teach the children to care for their health while in school; the child needs to carry the ideas and influences of the school into the home; here is one of the practical ways to connect home and school. This carrying of the ideas and ideals of the school into the home also serves another large need of the child. The programs of studies should contribute to introducing the child into membership of society.

Many children and even adults never attain membership in the social group. They remain through childhood and youth and even life in isolation, individuals but not a part of the social whole. To attain membership in society the child's easiest field to cultivate is the home, then the school. The cultivation here referred to is to sow the best ideas and ideals of health obtained in the school in the home and persist in seeing that they take root in the family mind and grow to fruitage.

The child's capital or assets in coming into the world are its physical organism, instincts, and capacities. To these assets the program of studies should with caution and care be adapted. The physical asset has already been referred to in this paper. The more difficult ones to provide for are instincts and capacities. Tradition and the academic spirit of the school militate against the proper care of the instincts and capacities of the child. When the program is not adapted, the results are not so easily seen as when the health is impaired, but the injury resulting from such lack of adaptation is none the less real and serious to child welfare.

Whatever education the child may attain to is built on its instinctive nature and by means of its instinctive forces. To diminish the instinctive forces of the child is to render it less able to learn. The appeal the program can make to the child for activity, endeavor, and perseverance must be made to the instinctive nature of the child else it can not respond. In early life its responses are entirely instinctive; later in life ideas come to have an impelling force, but only indirectly. The play motive is the child motive; it is instinctively made to play. The program that does not make large use of the play instinct fails to provide for and employ one of the large assets of the child. Then utility, that which can be seen to contribute to social, economic, and aesthetic welfare, is also an instinctive force in the child, and the school must make its appeal to this asset of the child if the learning is to be economically and well done. There is also a negative side to the instinctive resources of the child. The program of studies is either developing or atrophying the instincts of the child; there is no static condition. When we employ social pressure in the school or when we rely on the academic motive, mere love of learning, we impair the native resources of the child. This school disease, impaired instincts and wasted impelling force, is not only one of the easily discerned facts in our elementary schools but is at the same time one of the school crimes against childhood. The child, before schooling has done its work of deadening and stultifying its native impelling forces, is active, energetic, direct, and doing. Confined to dull subject matter, relearning it again and again to satisfy program requirements in no way connected with the life or the needs of the child, it loses much of its instinctive force and becomes a repeater of words and forms. It becomes an adept in absent-minded acceptance of what it neither understands or can put into action.

Another asset of the child that the program of studies should recognize and develop is its capacities. These are even more susceptible to the mistaken requirements of the program than are the instincts. The capacities are of varying worth to the child and to society. Some of them can be brought to a high degree of efficiency; others can only attain mediocrity. The school life itself is too short to develop all the child's activities were this desirable. Some of them must be ignored; others may be developed. It is highly important that the program of studies afford opportunity to develop the most efficient capacities. These the program should be varied and flexible enough to explore and discover. Some subjects the child can learn with greater facility and ease than others; this ease of acquisition is an evidence of what activities the child may most successfully engage in as a life career. The school life of the child and youth is the time to reveal the pupil to himself, to explore into his native resources. One of the tragic things in civilization is the misfits in vocation, men and women trying to do work for which nature has not endowed them; unrest, unhappiness, and inefficiency result; the loss and waste to the individual and to society, owing to the failure of the program of studies to reveal to the pupil his best capacities, are to

be deplored. The education value of a study depends in large part on the ease with which it is learned. Many subjects cost too much in time and energy, whatever value they may have for other persons who can learn them with facility. This fact or truth is recognized almost everywhere in life except in the school. Indeed, we are made on the plan to avoid the unnecessary expenditure of energy. Consciousness, as has been pointed out by psychologists, is parsimonious. It is present when there is need, and it is absent when the need disappears. In play, when the cost in energy is greater than the satisfaction resulting from the activity, we cease playing or change or vary the game. In our vocations we cease or change the direction of our energy, unless misdirected education renders it impossible, when the returns are out of proportion to the cost in time and energy.

It is true there is an education theory and practice that the value of study depends upon the difficultness of the study; the effort that must be put forth to do it. This theory and practice in our schools has its historical explanation. Anyone who will, with care, look into this bit of education history will be convinced of its unsoundness. Then if you will add to the historical evidence, the evidence of recent education psychology you can not easily fail to see the error of the theory. The value of study depends upon the usable knowledge that may be acquired just as surely as the value of farming depends upon the marketable or usable corn, wheat etc., that may be produced by the farming. In the proper study of any subject that will furnish when understood aright, usable knowledge, there will be abundant opportunity for endeavor and effort. It requires both industry and patience to build knowledge; there is no other way. When the child gives the time and energy to a subject for a reasonable time without adequate progress in the subject, it should cease to be a part of the curriculum of the child.

There is no one study or group of studies that may not be omitted from the curriculum of the child when it is discerned that the child can not make reasonable progress in it. To fail to omit the study or to diminish the requirement is not only to prevent the child from its opportunity of an education, what it can learn, but it also usually drives the child from the institution set apart for its education.

Certain subjects are regarded as the tools with which to get an education. They are sometimes called the fundamental studies, as reading, spelling, writing, arithmetic, etc. The thought is, the child can not acquire an education without them. It is true that the child who can learn them has an additional means of attaining an education, but it is just as true that the child may acquire usable knowledge and become very efficient without any one of them or even all of them. If the child can not learn to read after reasonable endeavor, reduce the standard of attainment to meet the capacity of the child. If it can not learn to spell or can not learn arithmetic, do not permit these subjects to block its way in the school. The large number of retarded children in our schools furnishes some very damaging evidence against our programs of studies and their administration.

Education has been very well described as a process of remaking experience. It is true this is not all of education. The babe must begin without experience to remake. All through life we continue to learn by direct contact, by trial and error. We get new experience. But trial and error learning is expensive and for this reason should be kept at the minimum. The more economic learning is by ideas, by remaking experience. Then, when the child comes to school, at 5 or 6 years of age, it has already a large fund of experience for use in the school. The program should be adapted to the use of this experience by the child.

The conception of education as the remaking of experience by the child suggests two phases of program adjustment to the needs of the child. The first is, What is the proper relation between the program of studies and the community activities in which the school is located? The second is, What modification of the teaching process should the community activities in which the school is located have? If the school is located

in a mining town, should the vocation of mining be taught in the school? If the school is located in a farming community, should agriculture be taught in the school? The adaptations of programs of studies to the needs of the children of the mining town means to construct the program in such a way that the mining experience and interests of the children can be used in school for purposes of learning. This is the minimum claim made by the community upon the program. Anything less than this much adaptation would diminish and prevent learning by the children and reduce the learning process to one of trial and error or to mere memorizing. The children in mining towns must draw on their sense experience of the mining industry to learn. Their experience must be used. The program must begin where the child is when it enters school. It is not only true that this is the place to begin but they need to continue their first-hand contact and build their sense experience—their concrete background. It is not simply a question whether any or all of them will engage in the mining industry. Their acquired resources are of this kind of knowledge and it is common-sense economy to use it in school. The mining standard of life affords a fine opportunity to teach the social needs of people, hygiene and sanitation. It must be remembered the child is educated by living the life appropriate to its age. The children are in this particular mining community. They can at most live the life of this community. It is in this community they are, if at all, to become members of society. Then it is fair to assume that some of the children will engage in the mining industry and live in mining towns. For these the program should afford an opportunity to learn how to conserve health and life, how to raise the standard of living, how to contribute to the solution of mining industrial questions.

If, on the other hand, the school is located in a farming community, both the need and opportunity for adjustment of the program is enhanced. The need is enhanced because the industry is a more fundamental one. All people are concerned either directly or indirectly in its increased efficiency. A large proportion of the children will continue to live in such a community and engage in farming industry. Then the opportunity for adjustment is increased. Farming gives a more varied sense experience for the child to draw upon in the school. It gives contact with plant and animal life and the means of producing and sustaining it. It affords a better opportunity for the exchange of products. The farming life is varied enough and rich enough to furnish the ideas and ideals for a high standard of living. The children come to school with a rich store of ideas and interests that the program should utilize and increase. The reading should be adapted to the vocabulary the children already have; every lesson in the early study of geography should make its point of contact in the farm experience of the child; history should likewise be begun with rural life and continue the history of the evolution of agriculture as well as general social, economic, and political history. Arithmetic should find its problems in the actual farm life of the community.

The adaptation of the program of studies to the need of the child may be well illustrated by home credit, community projects, and boys' and girls' clubs. The child of to-day does not have the opportunity of the child of a generation or two ago to participate in and profit by the home life for purposes of education. The program of studies in school should make up some of this loss to the child. The child needs to contribute to the home life in very direct and real ways. As the program in most schools is now made up and administered, it not only fails to stimulate the home life but it actually deprives the child of this opportunity. Home study assignments of the usual school subjects monopolize the home life of the child. Home study of the kind referred to above is of very doubtful value for the child; this kind of study should be done in the school and the child permitted and encouraged by the school to participate in home duties. The home furnishes a very desirable laboratory for the study and practice of many educative subjects, such as cooking, sewing, housekeeping, etc., for girls and such as home projects of various kinds for boys. These home projects for boys may

consist of the care of domestic animals, doing the chores about the home, caring for poultry, crops, gardening, etc. The boys' and girls' clubs for grain growing, animal feeding and care, gardening, canning, etc., make heavy demands upon the program for adjustment to the needs of the child. The school is missing a real opportunity in not adapting itself to the club work of boys and girls.

Finally, the program of studies should be differentiated in the upper grades to the individual needs of the children. It has long been recognized that the educative value of the upper grade studies, the seventh and eighth, is of a very doubtful nature. Some plans to remedy these grades have been proposed and in some schools put in practice, such as taking over these grades into junior high school and departmental teaching. One thing is certainly true—the needs of the child in these grades are even less well provided for than in the lower grades. The plan here proposed is that found in many schools—a differentiation of courses in the seventh possibly, certainly in the eighth grade. The number of courses suggested in this paper under the head of time allotment should be increased in the seventh and eighth grades. Some of those ending in the sixth and seventh grades might be extended, provided new subject matter is added, and then other courses not named should be added. In the upper grades the offering should be varied and abundant enough to permit pupils to elect any one of two or three different groups of studies. It should be possible for girls to elect a home economics group, a commercial group, or the ordinary arts group; for boys there should be at least the agriculture group, manual-training group, commercial group, and the arts group. With these suggested adaptations of the program of studies, it is believed the needs of the child will be more nearly met and the school will more adequately discharge its duty to the public.

EXTRAMURAL SERVICES OF STATE AND ENDOWED UNIVERSITIES, INCLUDING UNIVERSITY EXTENSION FROM THE HUMANISTIC STANDPOINT.

By DAVID SNEDDEN,

Former Commissioner of Education of Massachusetts.

When, in 1915, the Legislature of Massachusetts enacted legislation and provided an appropriation looking to the establishment of a system of publicly supported and directed university extension and correspondence courses, the State entered upon the development of a phase of education which had already been undertaken extensively in other States and which, by virtue of its extreme flexibility and varied possibilities, gives promise of filling the last gap left by our already complete public-school system in providing educational opportunities for all the people.

For the purposes of this discussion I shall include under extension teaching all phases of education—vocational, physical, cultural, and civic—which are offered to adults already so employed otherwise during their working day that attendance on regular schools and colleges is impracticable. I am asked to discuss the subject as it relates especially to humanistic, or, as I assume, liberal education. It seems to me that the matters of especial moment in this connection are: (a) Aims of general character of the so-called "humanistic education" to be given; (b) probable demands for it, including demands now manifest or felt, and also those which can be stimulated or awakened; and (c) methods of administering work so as to give the best results. The following statements are submitted in brief form for the sake of compactness of presentation:

I. The aims of liberal or humanistic education are still most inadequately defined in secondary school and college; hence materials and methods are probably ill-adapted and unserviceable in many, if not most, cases. Attention of educators is focused too exclusively on the content of the subjects offered, instead of on the func-

tioning of the teaching in the post school life of the person taught. A first and very important consideration, therefore, in the offering of extension courses of a humanistic character should be the progressive definition of the aims of such courses.

II. A fairly sharp distinction should be made between those offerings which manifestly serve simply to gratify intellectual or æsthetic interests already active and those other offerings which are expected to have definite functioning in better citizenship, better utilization, better health, and better personal character. This distinction is a difficult one to make now, but it is of such fundamental importance that it should be made. In the first category should be placed what may well be called the higher "play" interests, and in which visible functionings in social usefulness must be regarded as incidental by-products. In the second category should be placed those offerings which are intentionally designed to remedy defects of needed culture, to promote more efficient citizenship, and to affect attitudes of mind and qualities of character. The persistent effort to make the distinction here suggested will eventually enable us to test the "functioning" of the courses offered and the methods employed. In teaching and preaching we are often struck by the probability that good offerings are frequently like seed falling on stony soil (perhaps a more apt figure would be "in the water"), because no important result follows. Lecture courses patronized mainly by idle women, whose aspirations are temporarily but vainly stirred thereby, are examples. We have far too much of this futile work in school and college already; to extend it would be folly.

III. Where courses are offered chiefly for the satisfaction of intellectual and æsthetic interests—the larger play motives—sound policy requires that the players should pay in fair proportion at least for the entertainment. The public agency may well organize the work and serve as a clearing house. This applies to concerts, lectures, plays, moving-picture presentations, "Chautauqua weeks."

IV. But where extension teaching of a humanistic character is designed definitely to function in useful social attitudes and activities, then the principle of State support is justified. But here the standards of efficient and economical service should be applied. The actual functioning of the offerings must somehow be tested. The materials and methods involved should frequently be revised in the interests of more effective functioning. The contributions of the extension department should not be confined to information or instruction; they should include various forms of cooperation toward realizing locally, in actual achievement, the results planned for. Courses in civics, sanitation, social economy, community planning, and development of the cultural resources of the community should be accompanied by demonstrations, experimental work, and detailed research where necessary.

V. All extension teaching should be designed to bring about the "self-helpfulness" of its beneficiaries as speedily as possible. Lecture courses should develop into personally taught classes, and these into reading circles and correspondence groups. The movement should be steadily in the direction of promoting local independent capacity of various forms of self-help and self-direction. Local leadership in all forms of intellectual activity can be stimulated. The extension teacher should develop into an extension agent, overseer, promotor, or guide, always prepared to drop one form of work when local agencies sufficient to carry it on shall have been developed.

THE PERPETUITY OF THE INDEPENDENT COLLEGE.

By JOHN S. NOLLEN,
President Lake Forest College.

One of Prof. Baker's Harvard disciples in dramaturgy has recently produced a very successful comedy entitled "Young America." When I saw this play in New York the other day, I found it sufficiently amusing, but more disheartening. We were introduced to a group of typical well-to-do American families of young married people. The stage shows the interior of a cosy cottage, the home of one of these couples. There is not a book in sight, not a musical instrument, no evidence of interest in any form of art, or in religion, or politics, or philanthropy. These couples have no children, and their horizon is bounded by baseball, fishing, poker, lap dogs, and inane gossip. There are children in the play, at times they overrun the stage, and the interest of the action centers in one of them; but they are all from a lower stratum of society—the ragged, impertinent, slangy, mischievous, and ungovernable street urchins who pass through the juvenile court and the reform school to lives of vice and crime. The conventionally sentimental and wildly improbable good ending suggested at the close can not relieve the depressing effect upon a serious mind of this picture of the childhood and young manhood and womanhood of America. A similar depression seizes one on the perusal of the distinctively American Sunday newspaper, with the vulgar banality and offensive perversity of its horrible colored comic supplement; it is appalling to realize that in every section of our country and through every class of our population millions seem to crave this sort of thing, and that children cry for it. Is it really true that our broad democracy is becoming more and more a dreary waste of stupid mediocrity and selfish material indulgence? Has it no vestige left of the robust Puritan idealism or the dignified cavalier graces of an older American day? Is there to be, in the future that we are making, no beauty, no nobility, no aspiration to relieve the dead level of our commonplace existence? If so, then we might even welcome such a terrible catastrophe as is now devastating Europe, if thus our spirits could be stabbed awake. It might be worth a thousand hecatombs of human sacrifices to save our vast population and its posterity from the more or less refined bestiality into which so much of it is apparently sinking.

Of course, you and I believe there is a better way to the purging of our common life than the offering of such human sacrifices to a modern Moloch. We believe in the method of education, or else we should not be in the business of education. We believe in the great experiment of public education—an experiment which we are making upon a scale quite unexampled, for we have a larger proportion of our population at school than any other nation, and our army of over 20,000,000 students is incomparably the greatest in the world.

And we American teachers have thrust upon us a responsibility that transcends the like burden of our colleagues across the sea, because the home and the church are less efficient as educational agencies in this country than they are in other civilized lands. To meet this inordinately heavy responsibility we have in general a far less complete technical equipment than is demanded of European teachers, and even a high degree of energy and enthusiasm can not altogether make up for a shortage in expert training and skill. All the more is it incumbent on us to keep uppermost in our minds the fact of our heavy responsibility for the spiritual welfare and growth of our pupils; the fact that, though our profession has become dissociated from the priestly office with which it was once conjoined, nevertheless, we teachers do still have cure of souls. And I have the firm conviction that the institution which is especially called to perpetuate and to enforce this view is the independent Christian college.

Now, the Christian college, which once held the field alone in higher education, has in recent years been confronted with a form of competition that has seemed to threaten its extinction. There is a fairly close analogy here with the situation of the

old-fashioned retail shop when the department store appeared as a new and portentous competitor for public favor and patronage. This new type of glorified general store was equipped with several obvious and crushing advantages—immensely larger resources, the drawing power of bigness and of dazzling variety, a free-delivery system of wide range, imposing full-page advertisements in the daily papers. The result of these advantages has been a vast development of merchandizing on a huge scale in highly organized institutions with infinitely diversified interests. It is as a flaming arc compared with a rushlight, and moths will follow the crowd to the big show. In spite of this seemingly destructive competition, however, the small retail shop still exists, and manages to prosper under the very shadow of its big and showy rival. It can maintain its existence by cultivating its own peculiar advantages—by selling better goods in a better way, by specializing carefully, by appealing to a particular clientele, by building up through many years of efficient personal service a solid reputation, especially for a high grade of hand-made products. I can buy clothing at Marshall Field's—thousands do; but I prefer my little Swedish tailor.

The big modern university is not unlike Marshall Field's or Wanamaker's. The university, too, has huge resources (the University of Illinois has been voted nearly \$10,000,000 by the last two sessions of the legislature); it has the glamour of bigness and the lure of wide variety; it has great advertising power and, as State University, it has a truly magnificent free-delivery system—nay, more, it runs completely away from our analogy by actually making no charge at all for its goods. What wonder that it has grown prodigiously. Here are a few illustrative figures: From 1894 to 1914 the University of Illinois increased 761 per cent in enrollment, the University of Washington 613 per cent, the University of Oregon 402 per cent, the University of California 394 per cent, the University of Colorado 384 per cent, the University of Wisconsin 292 per cent. In number of students the University of California increased by 6,997, the University of Minnesota by 5,293, the University of Wisconsin by 5,038.

But meanwhile the independent college of the older type has not vanished; it has not been crushed; it has actually succeeded in growing in numbers and power and wealth at a rate far exceeding that of previous periods in its history, and in some cases even vying with the dizzy progress of the tax-supported universities. Typical independent colleges in the same territory as the State universities mentioned have grown in the same period by 121, 134, 140, 158, 254, 338, 501, 695, 798, and 1,647 per cent in enrollment, with an average increase of 286 per cent for the whole group of colleges. Has this persistence of the older type a valid justification; will it therefore continue? I believe we can answer in the affirmative. For the college does its own peculiar work better than the same work is done by the undergraduate department of the university; it has vital relations with a particular loyal clientele; it has at its best an unequalled facility for turning out a high grade of hand-made products.

I am well aware of the opposition these statements might arouse among many who are nowadays talking and writing about educational subjects. The college as an institution has been under fire recently as never before. Between its admirers and its detractors it stands like Goethe's Helen, "bewundert viel und viel gescholten." The trouble with our critics is, though, that they give us a welter of mutually exclusive judgments about everything; "as many hedges as many wittes ther ben." We can read, for example, that cultural ideals must be maintained and that culture is a back number; that the college is the most important factor in our educational system, and that the college does the poorest teaching in this poorly taught land of ours, and has become the vermiform appendix of our body pedagogic; that the traditional four years' course must be preserved, and that four years of college mean an unholy waste of time; that fraternities have become an essential feature of college life and that fraternities are anathema; that extra-curriculum activities are the best and most developing part of the student's experience, and that the side shows are ruining the performance in the main tent. The common man walks with a light heart between

these extremes, knowing little about the merits of the controversy and caring less: "Prophete rechts, Prophete links, das Weltkind in der Mitten."

Amid all the conflicting voices of the critics, and in the absence of universally accepted standards that would make a really objective scientific inquiry possible, I can do no better than to give a judgment based upon my own observation and experience, an intimate experience of both types of institution. I believe the good college actually does, within its limits, get better results in undergraduate work than the big university; partly because that is its specialty, to which all its energies and its expenditure are devoted with singleness of purpose; also because it has smaller classes and laboratory sections, a higher grade of teaching in elementary courses, more individual training. It is my experience also that in the smaller college the average student has a far better chance at wholesome participation in student activities and gets more of the value of esprit de corps. These advantages seem to me so valuable that even if the cost of the college per student were very much higher than that of the university—which is by no means always the case—still the expenditure would be completely justified.

The outstanding difference between the university and the college seems to me to be this: The university, with its great and varied laboratory equipment and its staff of technical experts, has the opportunity and the obligation to do a vast impersonal service to the State. We are all familiar with the figures put forth on behalf of the agricultural schools, for example, showing how many millions of value they have added and how many more millions they can still add to the output of the farms by the introduction of more scientific methods. That is a great and essential service, and quite sufficient reason for the liberal maintenance of such schools by the State. For this service the college is not equipped and not intended, and it will make only accidental or at least incidental contributions in this field. The college must serve through personality. Its relation to the community must be that of Socrates to the citizens of Athens; his work could only be done with small groups and with individuals, but it was a work of more enduring value to human society than that of all the bucolic experts of his day, with all the skillful artificers and merchants and soldiers and lawyers thrown in for good measure.

It is here that the Christian college has its great and unique opportunity; this must be its specific contribution to the forces that make for the development of a Christian civilization. We may indeed confess with deep humiliation that pitifully little of our Christian ethics has gotten into our civic and international consciousness, and sometimes we may even be moved to the anxious question whether Bushido has not done as well as the beatitudes in bringing forth in our modern civilization the peaceable fruits of righteousness. But we are committed to the great Christian experiment, and fundamentally we have no doubt of its ultimate success. And in the working out of this experiment the Christian college is a factor of inestimable value, for it is supplying a preponderant share of the Christian leadership of the Nation. Here again we of the Christian colleges may well beat our breasts and say that all is not lovely in the life and the influence of the institutions we represent. But the opportunity is ours in a superlative sense, and nowhere else is there such potentiality for the training of master workmen who shall build the walls and the towers of the new City of God.

You remember the noble ideal that inspired Fichte when he set his hand to the creation of the University of Berlin—complete subordination of every branch of instruction to the one great object of all teaching—not the inculcation of opinion, but the spiritual culture and elevation of the student; the high ends of all education were to be spiritual independence, intellectual strength, moral dignity. With the vast development of applied science, introducing infinitely varied technical interests and processes, with the urgent insistence of a practical and mercantile age upon vocational training and economic efficiency, the university, plastically responsive to the public need, has become in effect a many-sided professional school, ab-

sorbed in the training of men for scientific and highly specialized tasks, and diverting even the undergraduate course from its old broadly cultural aims to direct preparation for such specialized tasks. This was perhaps an inevitable development, and we shall quarrel with it only if its further progress shall threaten to destroy the values to which Fichte gave the highest place in his scheme of higher education, values which are inherent in the very character and purpose of the American college. Surely we still believe that man is more than the work of his hands or his brain, and that it means poor economy and low efficiency to sacrifice to any process whatever the highest values of human life.

The way of escape from the dangers that have seemed to threaten higher education in recent years is for the university to become frankly and fully what it has tended to become, a real graduate school, giving the indispensable professional equipment to men and women who have already gained some of the spiritual culture and elevation, intellectual strength, and moral dignity, which for Fichte were the ends of education; then, too, will it be dealing with students of sufficient maturity and initiative to undertake the work of research on a basis of fair equality with their rivals in European universities. The development in this direction has been very rapid. Forty years ago there were 200 graduate students in the United States. Now there are 10,000. Anyone who remembers the extreme crudity and insufficiency of medical education, for example, in our Western States in the eighties, and compares it with present conditions, will have faith that we shall live to see the day when professional instruction shall be graduate instruction.

But whether this shall become generally true or not, on the college still devolves the great task of elevating our citizenship by training young men and women to be the spiritual and moral as well as intellectual leaders of the people. May I quote in this connection the words of Prof. Leighton, of the Ohio State University:

"It is, perhaps, the independent arts college, free from entangling alliances with the vocational and utilitarian studies, that is in the most favorable situation to fulfil its vocation as the exponent of the supremely excellent things of the spirit, which are as difficult as they are rare. We need, more than ever before, centers where the theoretical or contemplative life is nurtured, where young men and young women can gain an intelligent appreciation of the history of culture and of the chief part which the rational constructive imagination has played in the uplift of the race; where by a free and earnest contemplation of the problems of humanity and nature, undisturbed by the clamor for action and quick returns, they may win a serene unbiased power of judging and evaluating the current shibboleths in the light of objective intellectual and ethical standards."

There need be no opposition between the college and the university, no destructive rivalry, if the one frankly recognizes its peculiar task and its honorable limitations, while the other applies itself with all its wealth of material and energy to the full development of its own broad domain. If the college is honest with itself and with the public, if it attempts only the things it can do supremely well—no matter how few—and if it remains always actively conscious of its spiritual mission, then it will deserve to survive, and it will survive by a constant demonstration of its fitness to train the leaders of a Christian democracy. Without this influence, all our easy prosperity may lead only to the weary, stale, flat, and unprofitable life of "Young America." With it, we may at least secure a saving priesthood of men and women—I quote again from Prof. Leighton:

"Informed and inspired by an intelligent appreciation of the crowning achievements of the spirit in man, ennobled by sympathy with the race's moral heroes, refined through the joy of companionship with the truly beautiful products of the race's creative imagination, mastering and possessing as its own instrument the methods of science, working in sympathy with our common humanity for the uplift of the race and calmed and steadied by faith in a Supreme Spiritual Order."

A COLLEGE DORMITORY SYSTEM.

By A. W. HARRIS,

Corresponding Secretary of the Board of Education of the Methodist Episcopal Church in 1916.

In England, a "college," whether the word be used to denote an institution of collegiate grade or one of the so-called public schools, includes a student residence; indeed this residence may be regarded as the primary college building. It is built upon lines suggested by the monastic buildings which many of the colleges inherited. The English college ideal was transferred to America and determined to a large degree the aims, methods, and equipment of the earlier American colleges all of which included dormitories. When, however, the West began to establish colleges, reasons of economy led to the omission of dormitories. What other reasons existed for the omission, and the relative importance of these reasons, it is not easy to determine, but it is safe to assume that economy was the dominating reason and the others after thoughts.

Even in the Middle West and the far West, it was not long before residences were erected for women, but the development of dormitories for men has been very slow. It has been urged that it is better for men students to live in private houses, for the sake of home influences, to avoid the so-called evils of dormitories, because private houses furnish natural conditions, etc. To the writer, these considerations seem of little importance and to work against some of the fundamental characteristics and purposes of the American college. There will be no one to dissent from the statement that the primary purpose of the college is intellectual, but a very cursory consideration shows that there are other purposes, some of them very important. The college career is not only a training but a life, and college life has made many valuable contributions to the national welfare. Some results, and in the opinion of the writer, some of the best results, are dependent upon the establishment of intimate social relations between student and student, and between student and instructor. The metropolitan universities, for instance, drawing their students from many walks in life and from many sections of the country, have created a bond of sympathy and union cutting across the dividing lines of social interests and geography. It would be difficult, to estimate how large an effect upon the growth of national feeling in the United States, as opposed to State feeling, has resulted from the establishment of colleges and universities that draw their students from a wide area and select their teachers without reference to geographical conditions.

The intimate acquaintance of student with student is dependent upon their living under conditions that bring them into frequent touch with each other. This is all the more important in coeducational institutions where the life of the men as a group and of women as a group must be definitely cultivated in order to counterbalance the natural social interest of these groups in each other.

The demand for close social relations among men students was one of the influences that early brought into existence college fraternities. It seems to be inevitable that any large community will break up into relatively small social groups. This is happening not only in colleges but in all communities. The groups are usually without organization and are in fluid condition. In the church—and this was once truer than it is now—there will be groups based upon a common interest, business, social, or intellectual, or upon residence; but the membership will not be very exactly defined. Members of one group will be members of other groups of which the make-up is quite different. Such groups exist now, and doubtless always did exist, in colleges; and it is very sure they will persist, some of them possessed of a formal organization from the start, others attaining to it by process of evolution. This is the fundamental basis of the fraternity organizations, which with their faults, obey a law that may be

called natural. In colleges which have forbidden fraternities, groups have grown up—clubs, or guilds, or societies—that are hardly to be distinguished from fraternities except in name.

Fraternity members were housed originally in the dormitories either as segregated groups, or were scattered throughout the college community; but very early there was evidenced a strong tendency for the members to get together and apart from other students. Houses were rented. These were not of the conventional dormitory type, for such buildings were not available, and the fraternities had not the means to build them, but they were private houses not particularly well adapted to the use to which they were to be put. In time, they fixed the type, and it came to be thought that a fraternity house ought to be not like a college dormitory but as much as possible like a private residence. What was an accident came to be sanctified by custom, and the fraternities were scattered about the college town in buildings unlike the dormitories, and remote from them and from each other. Thus the unity of college life was broken. A part of the student community lived in large groups in public dormitories; another part lived in small groups, each in a building like a private residence. The college community became physically divided into two communities—one unorganized, usually lacking in leadership and looked upon as without social distinction; the other composed of a group of small communities closely organized, sharply in rivalry with each other for college honors and offices, and holding themselves as socially superior to the unorganized group. The evils of this condition fell upon both communities. The fraternity men were overburdened with social opportunities and duties, the unorganized group lacked leadership and social privileges. These evils were recognized not only by the colleges but by the students as well, and efforts have been made to remedy them, usually by attempts to abolish the fraternities, or by the creation of college unions or clubs open to all students. Abolition usually resulted in little more than changing somewhat the character or name of the fraternities. The unions were more successful. An effort of a different kind made recently at Northwestern University may be of interest. This had to do with men students only.

Eight years ago, at Northwestern there were dormitories for women, but none for men. A large number of fraternities lived in rented houses built as private residences; most of them, houses that had seen their best days. As the cost of land was very high, no fraternity had purchased or built its own building. The university, however, possessed a large tract of unimproved land adjoining the instruction campus and furnishing ideal sites for dormitories. The same June that Woodrow Wilson presented to the trustees of Princeton University the quadrangle plan, the Northwestern trustees considered recommendations similar but with one important difference. Northwestern had fraternities; Princeton had clubs. The Princeton plan involved the abolition of clubs and the housing of the college community in groups of moderate size, including students and some members of the faculty, in quadrangles and making the quadrangle a social unit. The Northwestern plan accepted the fraternities as a permanent part of the college life, and suggested bringing fraternity men and others into one dormitory system. The difference in these systems grew more or less out of local conditions. Northwestern was fortunate in its possession of available land, and in its freedom from fraternity houses owned by the fraternities. The scheme aimed at a general community of interests in the college body and at strengthening the general college spirit; it set a standard of cost for fraternity buildings which would do away with rivalry and relieve the alumni from periodic calls for rebuilding and improvement; and it encouraged democracy.

For local reasons and for others as well, it was necessary that all the dormitories, including the fraternity houses, should be clearly and unquestionably the property of the university. So the friends of each fraternity were asked to present to the university a building to be held by the university for the use of the fraternity as a

dormitory. None of the fraternities were prepared to pay the full cost at once, and the university advanced a part of the cost, charging the fraternities a variable rental which is approximately the interest on the part of the cost of the building yet unpaid. These fraternity dormitories include private rooms, lodge rooms, and general social rooms.

The nonfraternity dormitories which are administered by the university, contain private rooms and general social rooms, thus providing for a social life very much like that of the fraternities. It is the expectation that each of these open houses will develop a permanent organization, looser than that of the fraternities but possessing most of its advantages. Such an organization will insure that connection of graduates with the student body, which is so important a part of the service of fraternities. This system has been made a part of the university policy, and fraternities are not allowed to erect or acquire houses off the campus.

The fraternity houses are not placed in one group but are scattered throughout the whole system, which, when completed, will include about 40 buildings. Eleven have now been erected and two are in process of construction. Each fraternity has been free to design, furnish, and decorate the interior of its building according to its own wishes, the exterior plans conforming to a unified general scheme.

The dormitory campus is a large rectangle, and the houses are arranged on three sides of a spacious interior field, about three city blocks in length. The east side affords a wide view of Lake Michigan. The dormitories will be grouped, eventually, in six quadrangles, seven units or houses in each group, and that side of each quadrangle facing the interior field left open.

Each house or unit accommodates about 35 men, and the small quadrangle, ranged about the common field, furnishes homes for a secondary unit of about 250 men. It is expected that these quadrangles will develop a group consciousness, and furnish many of the advantages of the small college.

This plan was not put into effect without difficulty. The trustees of the university were slow to enter into a plan that involved a contract with the fraternities for the permanent use of buildings belonging to the university and placed upon university land; the fraternities hesitated to commit themselves to a scheme which was a radical departure from the precedents. Both trustees and fraternities moved cautiously before adopting a course from which it seemed impossible to withdraw. The dormitories have now been occupied two years, and the results meet with general approval. Living conditions have been greatly improved; economy has been served by cooperation in heating from a common plant, in the purchase of light, etc. The men students have been brought into one group, new social relations have been established among them, the antagonism between fraternity men and nonfraternity men has been materially lessened, petty jealousies and rivalry between fraternities have disappeared. A new democracy has come into being.

THE DUTY OF STATE-SUPPORTED UNIVERSITIES IN REGARD TO SCIENTIFIC, HISTORICAL, ECONOMIC, AND POLITICAL RESEARCH AND PUBLICATION OF SUCH RESEARCH.

By A. O. LEUSCHNER,

Dean of the Graduate School, University of California.

Any inquiry into the duty of State-supported universities in regard to scientific, historical, economic, and political research and publication of such research raises the question at once whether or not there exists an essential difference between State-supported and privately endowed universities in the matter of obligation

to research and its publication. The importance of the prosecution of research on the part of institutions aspiring to be ranked as universities, not merely in name but in fact, has been set forth in recent years with increasing frequency and sustained emphasis, not only by members of the teaching profession but also by university presidents and other administrative officers. In most of the leading American universities, including State universities, promotion to the rank of assistant professor and to higher rank has been made contingent on productivity in research and publication. Mere success as a teacher—that is, mere ability to impart existing knowledge, no matter how successful—is no longer considered the sole qualifying criterion for appointment to professorships. The university of to-day demands that the professor lead his students to the unexplored frontiers of his subject, that he train their minds in the recognition of unsolved fundamental problems and in the scientific methods leading to their solution. His own example in the prosecution and publication of research must be a source of inspiration for students to enter upon unknown fields.

Historically, this emphasis on the research ability of a professor is but a natural consequence of the development of our entire educational system. The standard of the old bachelor's degree, even in our best universities, was barely comparable with the qualifications now demanded of students for junior standing. With increased efficiency of the high schools and more severe entrance requirements to our colleges came the opportunity for more advanced instruction in the junior and senior years, of a kind comparable to the work done in the first years of university work in European countries, as, for instance, in Germany. The bachelor's degree of today goes far beyond the curriculum of the gymnasium, which is the preparatory stage to the university, and falls short of the demands of a finished university education such as is represented by the doctor's degree. It is, of course, not necessary, nor even desirable, that our educational institutions should be patterned after those of Europe, except so far as to recognize the ultimate aim of higher education as expressed in the ideals of European universities, ideals which have justified themselves in every respect in the minds of university men as well as of the peoples concerned. Independently of comparison, it is evident that the bachelor's degree has lost its former significance, and it is perhaps more in place at the end of the sophomore or junior year than at the end of the senior year in our leading American universities. In fact the name "university" might properly apply to that part of the activities of our institutions of higher learning which commences with the junior or senior year. An inevitable result of the increased opportunity for advanced instruction in the last undergraduate years was the demand for men who ranked as authorities in the subjects they were engaged to teach, but the outstanding criterion of being an authority in any subject is a man's productivity in research and publication. Within less than the last quarter of a century there has developed in our leading institutions of learning a rivalry of attracting to their chairs men recognized as leaders in their professions.

The demands these men have made for opportunity for research and the inspiration they have brought with them has created in our universities an entirely new standard of scholarship and scientific spirit, among both the faculty and the more advanced students. Students who in their senior years had enjoyed the opportunity of closer contact with a branch of learning became imbued with the idealism underlying the pursuit of pure knowledge, and craved for larger and more intense opportunities. Professors, finding among their students material of the proper training and spirit to assist them in their research, gladly added to their scheduled duties courses in graduate study and research, and thus came into being the graduate school of the American university. What I have said is true not only for pure science, under which term, for the moment, I am including all learning that is not applied, but also for the applied sciences representing the professions of engineering, medicine, law, and so forth.

At the present time we seem to have reached a third distinct stage in the development of the American university, if we consider as the first stage that during which the bachelor's degree stood solely for a broad, cultural training, including the ancient classics, science, history, etc., the second as the stage when, in addition, emphasis was laid on advanced instruction in specific branches in the junior and senior years. The third stage, then, would be that of the graduate school standing for still more advanced study and research.

In the development of the graduate school, as in the case of the former two stages of development, the privately endowed universities of the East have led the way, but the State universities were quick to respond in regard to the first two stages, and they have been even quicker in their recognition of the significance of the graduate school. This seems to be the fact as far as the State universities of Michigan, Wisconsin, Illinois, Missouri, and California are concerned.¹ Does our inquiry into the duty of State-supported universities in the matter of research and publication possibly imply a transgression of the State universities into a field which should be reserved for private endowment? Does it mean that State universities should restrict themselves to research which will be of immediate practical value to the State and the Nation and that they should leave the pursuit of pure learning to privately endowed institutions, or does it mean that the advantages gained by the States from fully developed opportunities for research and publication, in both pure and applied learning, have been so conspicuous that the success of the movement should be set forth in concrete terms so as to extend a helping hand to such of our State universities as have never of themselves recognized their obligation in the matter of graduate study and research or as have struggled in vain to gain the necessary support from their legislatures? The obligations of a nation in regard to research are no longer debatable if we base our judgment on the many and significant papers published on this subject in this country and on the activities for the promotion of research on the part of organizations of learned men. The response of faculty and administrative officers of universities in creating opportunities for research and publication, of liberal men in founding research institutions, and of the cooperation of State governments with the aims of research men, are additional evidence of the acceptance of the principle.

The function of our National Academy of Sciences in the stimulation of research and the dissemination of knowledge has recently been set forth in an admirable manner by Prof. George E. Hale in a series of articles published in *Science* and reprinted in book form. The American Association for the Advancement of Science has appointed a Committee of One Hundred on the Promotion of Research. The National Honor Society of Sigma Xi has proved an enormous stimulus for research in pure and applied science. Many other events testify to the same universal awakening of the nation at large to the importance of research as a foundation for its civilization and prosperity. That the universities of this country should be cognizant of their responsibilities is but natural. In fact, the time has already come in the leading universities when opportunity for research is no longer considered a concession to this or that member of the faculty. As stated above, research is now demanded. At the same time the graduate school has lost its vagueness and has crystallized into a university branch of very definite aims and organization. President Schurman, of Cornell, says:²

The future of the American university is with the graduate school or department of research. These two—the scientist with his fruitful experiments and the scholar with his productive research—are the seers and accredited leaders of mankind in this twentieth century. In their light we shall see light, otherwise we walk in darkness. And it is such scientists and scholars who constitute the research department of the university. The graduate school is the supreme hope and crown of the university.

¹ *School and Society*, Vol. II, p. 821.

² *School and Society*, Vol. II, p. 822.

How pressing the whole question appears to the faculty of Ohio State University is evidenced by the following:¹

In any institution of higher learning the function of productive scholarship is of equal importance, at least, with the function of imparting the already achieved results of scholarship. It should be recognized as axiomatic that the true note of the university as distinguished from a college or a group of colleges is the presence and incessant activity of the spirit which makes for productive scholarship. An institution which consists chiefly of an aggregate of colleges devoted to imparting existing knowledge without any effort to add thereto, no matter how varied and seemingly efficient its departments may be, does not deserve the name of university.

On the continent of Europe it has been for centuries recognized that the labor to add to the sum of human learning is the most distinguishing characteristic of a university. This conception of a university was only sporadically in evidence in the older American institutions of higher learning until the foundation of the Johns Hopkins University in 1876. Since that time much progress has been made in the development of real universities in America.

The Ohio State University has not yet taken her rightful place in the noble rivalry of scholarly competition. * * * The graduate council is strongly of the opinion that the time is ripe for the explicit adoption of a university policy that looks toward the active promotion of research as now the most crying need of the university.

* * * To serious-minded students the most inspiring teachers are almost invariably those who bring to the classroom or laboratory the feeling of living contact with the unsolved problems of their subjects and in whom the students recognize frontiersmen in the conquest of the wilderness of the unknown. The separation of teachers and productive scholars into two distinct and contrasting groups is fallacious and mischievous.

In the report from which I am quoting significant extracts are contained from statements made by presidents and other administrative officers of leading universities.

There is absolute unanimity of State-supported, as well as privately endowed, universities in regard to their obligation toward research. Many practical suggestions are advanced for meeting this obligation. The faculty of Ohio State University recommends, on the basis of the information which it has gathered, that "those professors who give graduate work should teach a maximum above which no productive scholar should under any circumstance go, but that there should be no minimum. If a man is of sufficiently high character and attainments to be made a professor, it should be left to his own discretion to determine how many hours it is expedient for him to teach."² Surely this recommendation could be put in operation only in a very few even of our leading institutions and in these only to a very limited degree. But the recommendation is significant in its emphasis of the duty of a State-supported institution in regard to research.

There does not seem to exist then any essential difference in the manner in which State-supported, or privately endowed, universities view their duties in regard to research. Nor does the increasing emphasis on research in our leading universities have its source in a rivalry for prominence in student attendance, in the reputation of faculty members, and in the pursuit of abstract and useless truth.

The root of all the striving for development of graduate study and research in the university is the same as that from which has grown the nation-wide awakening toward the importance of research, namely, as Prof. Robertson, of the University of California, so well expresses it, the recognition that—³

In all ages scientific curiosity, guided by the scientific discipline of thought, has forced men into new and more complex paths of progress. Lacking the spirit of research, a nation or community is merely parasitic, living upon the vital achievements of others, as Rome based her civilization upon the civilization of the Greeks. Only an indefinite and sterile refinement of the existing environment is possible under such circumstances, and humanity stays stationary or sinks back into the semibarbarism of the middle ages.

¹ School and Society, Vol. II, No. 49, p. 821.

² *Ibid.*, p. 823.

³ "The cash value of scientific research," *The Scientific Monthly*, November, 1915.

To quote further:

If, therefore, we ask ourselves what has been the value of science to man, the answer is that its value is practically the value of the whole world in which we find ourselves to-day. * * * Concrete illustrations of the value which scientific research may add to our environment are not far to seek. They are afforded in abundance by the dramatic achievements of the past century of human progress, in which science has begun painfully and haltingly to creep into its true place and achieve its true function. * * *

On the morning of Christmas Day, 1821, Faraday called his wife into his laboratory to witness, for the first time in the history of man, the revolution of a magnet around an electric current. The foundations of electromagnetics were laid and the edifice was built by Faraday upon this foundation in the 14 succeeding years. In those years and from those labors the electromotor, the motor generator, the electrical utilization of water power, the electric car, electric lighting, the telephone and telegraph, in short all that is comprised in modern electrical machinery, came actually or potentially into being. The little rotating magnet which Faraday showed his wife was, in fact, the first electric motor.

What was the cash value to humanity of those 14 years of labor in a laboratory?

According to the Thirteenth Census of the United States, the value of the electrical machinery, apparatus, and supplies produced in this country alone, in 1909, was \$221,000,000. In 1907, the value of the electric light and power stations in the United States was \$1,097,000,000, of the telephones \$820,000,000, and the combined income from these two sources was \$360,000,000. Nor does this represent a tithe of the values, as yet barely realized, which these researches placed at our disposal. Thus in its waterfalls the United States is estimated to possess 150,000,000 available horsepower, which can only be realized through the employment of Faraday's electromotor. This corresponds, at the conservative figure of \$20 per horsepower per annum, to a yearly income of \$3,000,000,000, corresponding at 4 per cent interest, to a capital value of \$75,000,000,000.

Many other striking illustrations are cited by Prof. Robertson.

To quote further from a recent address by Prof. Jacobson, of the University of Nevada:¹

Scientific research is, by the general public, one of the least understood and therefore least appreciated departments of science. The American people have been comparatively slow to recognize the value of the deeper and more fundamental researches in science. The national trait of desiring quick returns with a minimum expenditure of time and money has led to a certain superficial empiricism, which has gone under the garb of research. * * *

Secretary Daniels is reported to have said:

The time was that when we thought of battles we thought of men. We were told by great leaders who had not looked into the future that the nations with the most men would win. Now it is not men, it is munitions and inventions, and to-morrow it will be neither—it will be chemistry.

The greatest problem confronting the profession to-day is that of getting recognition and support from the public through its legislative bodies; but, as I mentioned before, the European War has done more than any one thing to secure the desired recognition.

The question has doubtless arisen in your minds why it is that scientific research in Germany and other European countries occupies a higher plane than in America. To me the reason is obvious, and it is this: In Germany there is popular recognition for the research man. * * *

In the same vein Prof. Arthur D. Little, speaking before the United States Chamber of Commerce, says:

The plain underlying reason why we have been unable to develop in this country an independent and self-contained coal-tar industry is to be found in the failure of our manufacturers and capitalists to realize the creative power and earning capacity of industrial research.

Everybody recognizes that teaching and research should go hand in hand and that no university professor fulfills his obligations unless he is doing some original investigation tending to advance human knowledge. This is all well and good, but are the colleges and smaller universities of the country allowing sufficient time to their professors for such work? How much creditable research could a professor carry out

¹ "Some aspects of scientific research," Science, Vol. XLII, No. 1087, p. 596.

in the course of a year who is obliged to teach 12 to 18 hours per week, with an additional 12 or more hours in the preparation for his work? Young, enthusiastic professors have tried it over and over again, but with the same result—a stupendous failure—as far as research goes.

The professor who has spent his energies in the classroom during the day is in no way fitted to continue his research problem in the evening, as many of them do. A neglect to observe the proper requirements for rest and relaxation will immediately tell upon the quality as well as the quantity of work produced. Consequently the college or small university can never hope to produce but an insignificant amount of research work, and this fact is recognized by President Woodward, of the Carnegie Institution at Washington, and by other administrators of research funds. It is very rare that a college professor gets a grant from such a fund, and for the very reason mentioned above. * * *

Also quoting a paragraph from Prof. Woodward's report of the Carnegie Institution at Washington for last year: As regards the conditions favorable to research he says:

“that fruitful research entails, in general, prolonged and arduous, if not exhaustive, labor for which all of the investigator's time is none too much. Little productive work in this line may be expected from those who are absorbingly preoccupied with other affairs. Herein, as well as in other vocations, it is difficult to serve two or more exacting masters.

The question whether our inquiry implies a transgression on the part of State-supported universities into a domain which should be reserved for privately endowed institutions appears to have been fully answered by the faculties and administrative officers of State universities themselves. There is no evidence that State universities consider their duties in regard to research any different from those of privately endowed institutions.

Are there, then, imperative reasons why a State university should apply itself to one kind of research as distinguished from another, and in particular should a State university limit itself to those researches which find an important practical application in the interests of the State and the Nation? In regard to this question, I have sought the views of many of my colleagues who are actively engaged or interested in research in the University of California. There appears to be a unanimity of opinion that, while a State university should be at the service of the people in the solution of practical problems and in that respect should cooperate with the Government in every possible way, this direct service to the State and the nation should not obscure the prosecution of pure research that may not immediately be translated into practice or estimated in dollars and cents. This, indeed, must be the function of research in all universities, whether State-supported or privately endowed. Without it, research will be, to a large extent, superficial and will not produce the idealism that stands for advance of civilization. Nor can it be foreseen, as in the case of the researches of Faraday and of innumerable others, what will be the ultimate good to the world of research that at the present time may seem to have no practical significance. But in the service which a State-supported institution should render the community, it finds an additional duty to that demanded from privately endowed institutions, and therefore the support of research in State institutions is even more imperative than in privately endowed institutions. Every university, of course, may well emphasize those researches for which the opportunity lies at its own door, but even that must not be carried to the extreme.

To quote from statements by members of the faculty of the University of California: Herbert C. Moffitt, professor of medicine and dean of the medical school:

There can be no question as to the duty of the State university in encouraging research in every department.

The State has peculiar obligations in respect to medical research, as medicine of to-day deals largely with prevention and social work in the community.

The application of medical research to practical problems is to-day evident in many directions. Wise sanitation in regard to malaria and yellow fever enabled the Panama Canal to be built; typhoid and cholera have been practically prevented in the Euro-

pean armies by inoculation, a product of pure laboratory research and animal experimentation. Comparatively recent researches in respect to typhus fever have brought results in the control of typhus in Servia. I might mention further the control of diphtheria by serum, the treatment of epidemic meningitis by serum, and the treatment of syphilis by salvarsan.

It would be unwise for a State to attempt to guide research, but geographical or climatic conditions might in some instances determine its direction. Thus our own State might encourage research along agricultural lines, in tropical medicine or in tuberculosis.

Wider fields of research have recently been opened in medicine—those of preventive medicine and social work. It would be extremely desirable to have the medical department of the State university in close touch with the State departments of hygiene, pure-food control, and sanitary engineering. Work in social service would include cooperation with the industrial accident commissions, with State asylums for the insane, and with the institutions and courts in control of the problems of juvenile delinquents and backward children. Such clinical and social research, as well as laboratory research, would be of tremendous usefulness to the community.

W. E. Ritter, professor of zoology and scientific director of the Scripps Institute for Biological Research:

Liberal State support of research in science, as in other departments of knowledge, is absolutely essential to the highest and best development, intellectual, moral, and every other way, of the community. I believe it is impossible for a community to turn this aspect of its life over to private enterprise and reach in this way the best results. No matter how abundant private gifts to this end may be, the research carried on under these auspices will never meet the full needs of the situation; this for three reasons. First, research in science, at least, is contingent upon a measure of coordination and correlation in numerous directions that are so intimate and far-reaching as to make it impossible of accomplishment by any other means than the highest governmental authority itself, namely, the State. In the second place, it is only through research supported and controlled by the community that research itself can attain the prestige in a community which it deserves. And finally, the full fruition of research can be assured to the community as a whole, only when the community itself is responsible for its accomplishment and for the utilization of its results.

T. Brailsford Robertson, professor of biochemistry:

State-supported universities have, in my opinion, an even more imperative duty to perform toward research than privately endowed institutions. The results of scientific research are the lifeblood of civilization in any and every community. It is the first duty of the community to secure not only its circulation but its continued re-creation. The advancement of scientific knowledge is in one broad stream. Its division into scientific "trinkles" each supervised by a "specialist" is entirely artificial, and injurious for the double reason that it tends to make scientific men into narrow specialists and that it tends to divide the sympathies of scientific men and to lead them to lose sight of their common interest and purpose. * * *

Science depends not upon localities but upon men. Thus the greatest authority upon the physical chemistry of dyeing resides in Athens—that is not a center of the textile industry. I do not see that any special good would be accomplished by transporting the person of Prof. Zacharias from Athens to Manchester, nor by denying him facilities at Athens because the interests of Greece are in tobacco cultivation and maritime transport.

To-day when results are promptly and freely circulated the geographical distribution of investigators is of importance only from the point of view of the stimulating example and opportunities they afford the young people in their vicinity. The precise field of research is immaterial and must be left to individual choice.

Cooperation with State authorities is very desirable, as it is only in this way that the authorities can arrive at any intelligent conclusions. Also in this way the public may be educated in the value of research and the investigators may be stimulated by the opportunity to visualize the practical needs of the community in which they work.

Gilbert N. Lewis, professor of physical chemistry:

A State university will be inevitably interested in problems of scientific and humanitarian character which are of special importance to the community in which it is situated; but if it gives its chief attention to such problems it becomes inevitably

provincial. In order to achieve the proper ideals and ambitions of a university an institution must play a leading rôle in a larger community, the world-wide community of universities and scholars.

Herbert N. Evans, professor of anatomy:

Any doubt about the duty of a State-supported university in regard to research could only involve doubt either about the concept "University" or a proposal to hold apart two kinds of universities, one for instruction and one for investigation. Scholars are unanimous in the belief that this kind of separation would be deplorable. The ability to point out to mature minds what has been accomplished in any science must be intimately connected with the ability to state what has not been accomplished. The ability to confirm what has been accomplished is not far separated from the ability to win new facts. Should the State not undertake to advance knowledge, it is even questionable whether it could present adequately the present state of knowledge * * * There would not seem to be any doubt about the value to the state of research accomplished in any department of its medical school, inasmuch as the avowed end of a school of medicine is scientifically founded therapy.

Particular States have particular problems or rather opportunities which a proper division of labor among scientific workers should lead them to emphasize.

We should go much further than recognition of cooperation between university officers and State commissions. University officers in State universities can not escape being State officers. There should be a greater recognition of the State's legitimate use of such expert service and it is economically wrong to duplicate such service; for example, the State director of agriculture and the head of the department of agriculture in the State university. It is obviously absurd for the State to maintain a university school of medicine without conferring upon the graduates of that school the licentiate to practice.

Finally I would say that support given research by a State should be given without reservation or an eye to practical results. Such provisions would forbid the freest exercise of the only quality responsible for progress, i. e., imagination.

Carl C. Plehn, professor of finance:

The advantages to the State of the cooperation of faculty members engaged in research are that the Government secures the services of men tested by the university tests of accomplishment, training and knowledge. These tests are better than any "civil service" tests. The Government also secures the services of men in touch with the latest results of research, men with an unselfish interest in the results, and generally of men with some creative imagination. The services thus obtained could be had in no other way, except at prohibitive cost.

It appears to me, however, that the university is the greater gainer. The professor so employed gains greatly in knowledge. * * * Supported by the powers of Government he can obtain information and knowledge not otherwise available. * * * In the economic, social, and political fields there are no laboratories, experiments can not be performed, and many of the facts that we need to observe and to study are concealed from the eye of the private observer. In this these sciences differ from natural sciences. Take a single example, industrial accidents. The number of these, their character, the resulting disabilities to the sufferers, the cost to society in life, in labor power, in products, and in money were unknown and unknowable until Prof. Whitney had the power of Government placed in his hands to force the revelation. Examples might be multiplied, in connection with defectives and delinquents, with the study of monopoly, of competition, of labor, of wages, of taxes, of corporate greed and profits, and so on.

Besides gaining in knowledge, the professor also gains in accuracy and caution and acquires a feeling of responsibility for his views and theories which it is sometimes hard to acquire in other ways.

Thomas H. Reed, associate professor of government:

In the matter of political science, I think that there is a special field for work by State universities in gathering data with regard to the operation of State and local government and making that data available for general use by publication. I mean by this something very much more serious than what is attempted by our bureau of municipal reference, for example, in the extension division. I mean genuine scientific research into the problems of government and the foundation upon this research of such generalizations as will help to make our Government more practically efficient, representative, and economic.

Let me suggest, as a concrete example of a very practical service, the paper on the commission form of government prepared some years ago by Ford McGregor, of the University of Wisconsin, which remains the best and most authoritative statement of the theory and practice of commission government for cities which we have.

C. L. Cory, professor of electrical engineering:

Experimental engineering State laboratories should limit their activities to definite engineering research as contrasted with investigations in any way related to commercial development. Naturally the character of research will be indicated by the particular engineering problems in each State.

There should be scientific and engineering cooperation between the members of the teaching staff of the State universities and men engaged in similar work in the great industrial and manufacturing corporations.

The most serious difficulties will be overcome or rather avoided if the experimental laboratories are used exclusively for experimental investigations or research definitely removed from commercial development.

The great corporations like the American Bell Telephone Co., the General Electric Co., and the United States Steel Co., all maintain extensive research laboratories, and it goes without saying that the creative work done in these laboratories is of the highest order. Research investigations of a similar character, although of less commercial importance, will be the proper field for such experimental laboratories in our State universities.

W. A. Sawyer, director of the State Hygienic Laboratory, clinical professor of preventive medicine:

I feel that the duty of the State university to carry on research is equal to its duty in giving routine instruction in knowledge already established. Personally, I feel that the duty is most obvious in connection with research work along problems having a special local interest. I fear that we are influenced in the choice of subjects for research work by certain fashions and that there is consequently an unnecessary lack of variety and a curtailment of the benefits to be derived by the citizens of the State. To enlarge upon my point, as examples of the selection of subjects of special interest to California and therefore of unusual importance as lines of research, I might mention the work of Prof. Merriam in connection with the fossils in the asphalt beds at La Brea and the work of the history department along lines of Pacific Coast history.

The above discussion applies especially to research along lines of hygiene and public health. The State university should carry on investigations along lines where there is an obvious need of a solution. For instance, in California research in tuberculosis would be important, as would also research in sanitary engineering problems which have never been worked out in this climate. Public health and hygiene are still hampered by many traditions which will later be found to be false, and I feel that it is the duty of the State university more than any other body to carry on research to eliminate the false from the true.

Cooperation by the State university with State boards and commissions in research is highly desirable as it increases the efficiency of both. I am in a position which makes me peculiarly alive to its advantage. In public health work contact with the needs of the State as known to the State board of health gives the university research worker a better knowledge of the probable future application of his results. This tends more or less unconsciously to steer him into channels which will bring immediate fruit for the welfare of the people of the State. Moreover State commissions are apt to be so involved with administrative work and routine investigation that they are unable to pursue, over suitable periods of time, research work on their very important problems, and the university worker is often glad to have the work and material handed over to him.

J. C. Merriam, professor of paleontology:

With reference to my own subject—that is, paleontology and historical geology—the experience which I have had for a number of years past indicates to me the desirability of having a certain amount of research in these subjects carried on by State universities which are geographically so located as to be able to take advantage of fields which are not thoroughly studied. * * *

I believe that a State university should emphasize particularly the study of materials which are at hand or materials for which the university is in a particularly favorable position to make exact studies.

I believe that all scientific work, whether in State institutions or in other institutions, should be carried on in every instance with cooperation, so far as possible, with all other investigators on State and Federal commissions. I feel it undesirable to have the freedom of work in a State university hampered by entangling alliances with State, Federal, or other institutions, whose interest might be considered to dominate those of the university.

Frederick P. Gay, professor of pathology:

I believe that State universities should be supported with the definite understanding that the support afforded will be utilized in expanding knowledge as well as in teaching acquired facts. It seems to me that this support of research by the State should be definitely stated in appropriations, and should be given whole-heartedly, that is to say, without, of necessity, the suggestion that research done should be of practical value, since we all recognize that the practical value of research can never be determined at any definite period in its development. I believe, however, that so far as is feasible those undertaking research should naturally have in mind the possibilities of applying their own methods of investigation to problems that may arise in the State itself. One's problems are naturally suggested by his surroundings and in our own field of activity we regard it in general as desirable to investigate those diseases in the community in which we live, particularly if such diseases are not likely to occur elsewhere. * * *

Our department has been systematically investigating the methods of prevention and cure of typhoid fever for the past three or more years. We were led to undertake this application of previous more theoretical studies for reasons that arose in our own surroundings. * * * We believe that our work has been of service to the State, as is evidenced from the recent report of the State board of health, where it is shown that in the last two years deaths from typhoid fever have distinctly diminished. This diminution is due not only to the fact that we have remarkably increased the number of people in the State who have been vaccinated against typhoid fever, but more particularly owing to the fact that the public has been stirred up, interested, and informed concerning the various methods of preventing this disease.

Since aiding in preventing the disease, we have in logical sequence begun the study of methods of curing the disease, which is also giving evidence of results.

We regard, then, this research on which we have spent a good deal of time and some State money, as being justified in returns directly to the State, and more particularly in returns which the State contributes to the sum total of useful knowledge. Throughout this investigation we have worked in harmony with the State board of health, and through them have been able to carry out and apply the methods we have devised, which gives evidence of useful cooperation between university officials and a State commission.

C. B. Lipman, professor of soil chemistry and bacteriology:

It appears to me that, since there is hardly any other State-supported institution which carries on research work besides the State university, it should be given fully as much in the way of facilities necessary to the intelligent search for truth as for the purpose of advanced education of its youth. * * *

With reference to phases of this subject which affect my own department, I have of course even firmer opinions. From my study and thought on the subject, I feel fully justified in believing that scientific activity in agriculture when its potentialities are fully realized, can be accorded the dignity, the value, and the beauty which characterizes the very highest and finest types of research activity. While there is no shadow of doubt in my mind that these are the potentialities in our subject and that we shall need them to-day, I know that we are far from having attained that position. * * *

I do not believe that anything which is carried out in research institutions may be regarded as being without application in the end to some form of human activity or human welfare, though it is obvious that some forms of research may for many years be without fruit so far as the practical world is concerned.

M. E. Jaffa, professor of nutrition:

As you are probably aware, the State board of health has established and is operating its State food and drug laboratory on the university grounds in the division of nutrition. Such laboratory has been in operation since January 1, 1908, and for eight years I was director of the same, but, owing to the increased demands of university work, I have resigned the directorship and now act as consulting nutrition expert for the State board. The practical applications in the laboratory of the results of research

in nutrition and food chemistry have been of the greatest help and value in the conduct of the laboratory and in the prosecution of court cases.

When the question of the location of the State laboratory was discussed by those vitally interested, it was strongly urged by the university representatives and cordially agreed to by members of the State board that the laboratory should be operated under the auspices of the university on the campus. The main object of such action was to remove the laboratory from the realms of politics and give a much better tone thereby to the work, both analytical and research.

The study of the dietaries of the State hospitals, asylums, etc., now being conducted, is another illustration of the practical application of research in nutrition to the bettering of conditions in the said institutions. These investigations have clearly demonstrated the necessity for the benefits that will arise from such work both financially and physiologically.

T. T. Waterman, assistant professor of anthropology:

I have been given to understand * * * that university men are contributing rather more than their proportionate share to the research of the nation. I am most interested myself in the practical question of how such research can be combined with instruction. It is, I think, a fact that teaching institutions do a great deal more research, as measured by publications, than do the purely research institutions. I believe thoroughly that the teaching of classes is a distinct source of inspiration; and the men who have no teaching to do are at a serious disadvantage.

I have been surprised more than once at the liberal attitude of this university toward anthropology, both as regards instruction and research. Our courses lead nowhere, inasmuch as they are not prescribed in any curriculum (except that of domestic art); and anthropology is a subject that does not offer jobs to teachers. This is one of less than half a dozen universities that takes the subject seriously enough to assign it to a separate department.

C. A. Kofoid, professor of zoology:

In my opinion the natural sciences afford a field of inestimable value for training of men in sound principles of research. They are predominantly pure sciences in which the human spirit is freest to pursue the truth, no matter where it leads, without regard for social or political questions or conceptions, and without deflection by economic or financial considerations. In other words, this field of the pure sciences lends itself to the fullest freedom of research.

I think one point might be made under this head with regard to the desirability of maintaining research in the universities rather than in research institutions apart from a teaching staff manned solely by men who have no duties of instruction and no contact with the student body, whatever their status may be. There has been a decided tendency since the foundation of the Carnegie Institution for research funds to drift more and more under the control of detached bureaus. I believe this, if continued too far, to have in it a menace of greatest concern to our State institutions. In the first place it will relieve those in authority from the duty of providing for research on the part of teaching faculties of State universities, since provision is elsewhere made for this function. The effect of this, if long continued, will be to build up a bureaucracy in research departments devoid of vitalizing connection with the student body and the compulsion of humanizing and translating of results to others. It will also tend to make the teaching body mere translators of work of others, instead of active producers, and thus undermine the true university spirit.

It is, in my opinion, extremely desirable that the necessary administrative machinery for cooperation of members of university faculty with boards of the State should be established and fostered. A striking instance of the efficiency of such a system with its desirable feature of continuity and permanence of policy is to be found in the affiliation of the Illinois State Laboratory of Natural History with the University of Illinois. In this institution the professor of zoology is by virtue of his office the director of the State laboratory.

H. E. Bolton, professor of American history:

A knowledge of history lies at the root of all sound civic reform. It is within the special province of a State, therefore, to encourage the investigation and correct teaching of history. * * *

Theoretically, State universities should be the nurseries for scientific data and expert service in all important lines of public interest—civic, economic, social, and political. They should provide the laboratories and libraries from which experts in all lines

may draw their scientific, theoretical, and historical data, on which sound practice and progress in practical affairs must rest.

Examples of what State universities have already accomplished are numerous. For a classical example one may point to the relation of German efficiency to the State-supported universities. In this country, perhaps the best example is the University of Wisconsin, whose faculty has become a great corps of scientific experts, giving advice to legislators, public officials, farmers, manufacturers, and craftsmen in all lines. The university is the State's great laboratory, furnishing scientific data and expert advice. It has set itself the task of solving the problems of the people of the State, notably the problems of an agricultural people. The value to the State can be illustrated by a single example. Stephen Moulton Babcock, as a professor in the university, applied his scientific knowledge to the invention of a milk tester, making it possible for farmers themselves to determine whether a given cow was profitable or not, on the basis of the percentage of butter fat in her milk. Babcock refused to patent his invention, saying that his time and his brains belonged to the people who employed him. That one product of science, by one professor, has been worth millions of dollars to the State of Wisconsin, and I fancy that I am within the mark when I say that it has been worth to the people all the money they have paid to all the professors since the university was established half a century ago. Other scholars applied their scientific knowledge to the testing and selection of grain seeds, and thereby alone have doubled the productivity of ordinary grains, and so examples might be multiplied. To turn to a field in which results are less tangible than in agriculture, it is within the truth to state that Prof. Frederick J. Turner, through his investigation and interpretation of American history, has made one of the great advances of all time in the understanding of democratic institutions. * * *

The University of California has recognized its responsibility for the study of its own peculiar problems by undertaking to provide for the writing of the State's own history. It spent \$150,000 for the purchase of the great Bancroft collection. It established, through the aid of the Native Sons, two annual traveling fellowships, for the investigation and collection of foreign sources of California history; it is cooperating in the work of the California Historical Survey Commission, as indicated below; and it has established two series of historical publications.

In the selection of fields for emphasis, local interests should not be interpreted too narrowly, for problems and interests are generally regional rather than intrastate. In history this has been illustrated by the whole history of sectionalism, which has played so important a part in the development of our country. As an example, the States of the "Old Northwest" have had a common history. Recognizing this, Wisconsin has made itself the great center for the study of the history of that entire region. The University of California, similarly, has recognized its regional as well as its local responsibility and opportunity in historical work. Possessing the Bancroft library, which covers the whole of western North America; being located in a region having a Spanish inheritance, and where Spanish interests are strong, and at a vantage point with respect to the history and development of the Pacific Ocean, it is undertaking to provide a center for the investigation not only of California history in a limited sense but of the whole American West, with its Spanish and English backgrounds, and with its Pacific Ocean influences.

An example of the cooperation of the State University with State commissions is found in the California Historical Survey Commission, established by the last State legislature. The purpose of the commission is to provide a kind of service which is indispensable to the university in the development of its work in the history of the State, but for which it lacked funds. On the other hand, the university is cooperating in the direction and work of the commission. The idea of the commission originated in the history department of the university; the bill was drawn there; one of the members of the commission and two members of the advisory committee are members of the history department, while the executive secretary and archivist is a candidate for the degree of Ph. D. in the university, where he is writing his thesis in California history.

The preceding quotations from statements by members of the faculty of the University of California, representing pure and applied sciences, economics, political science, and history, leave no doubt of the duty of State-supported universities in regard to research, both pure and applied—in particular, such applied research as may be called for by the needs of the people. Our inquiry makes no reference to research in other fields, as, for instance, in languages and literatures of other peoples. The duties of State universities in this respect must be the same as of privately endowed institutions, and that there is vast opportunity for such research, can

not be doubted. One of the important results of the intelligent study of the languages and of the classical literatures of other peoples must be a greater appreciation of their culture and better understanding of their points of view on political, social, and economic questions, and, therefore, enhancement of amicable international relations.

With reference to research in ancient classics, I may quote as follows from a statement by Prof. W. A. Merrill, professor of the Latin language and literature:

There is much to be done in the classics. The new discoveries in the field of knowledge have made necessary research anew in classical fields. * * *

The State and Nation have a duty to support endeavor to advance knowledge in literature and art. Whatever can be done to raise the level of culture of the Nation is worth while.

And the following from Prof. Rudolph Schevill, professor of Spanish:

As regards Romance languages and literatures much depends on the locality of the institution, its traditions, its endowment, etc.,. Here, for example, we are favored by circumstances in the study of (1) Spanish, (2) French, (3) Italian, by the interest taken in these languages, in the history of their countries by settlers from those nations. California is intimately related with the traditions, history, and culture of the Spanish-speaking world. Our citizens should be, and are, interested in having the culture of the Spanish nations investigated. * * *

The less provincial our citizens are, the more they know of Spain, France, and Italy (speaking from the standpoint of romance languages), the more service can they render the State. Practically, we can cultivate relations with foreigners who have come to dwell here, and their interest in the university means an interest in the State.

Our second question, whether a State university should restrict itself to purely practical research, seems to be answered abundantly in the negative. The universal recognition by the higher institutions of learning in this country that the prosecution of research can not be neglected nor delegated solely to the great research institutions that have sprung up in this country through private generosity, such as the Smithsonian, Carnegie, Rockefeller, and other research institutions, imposes upon State universities whose faculties have not as yet looked forward to the development of graduate study and research an immediate and imperative duty, and to such State universities as have not succeeded in obtaining the cooperation of their legislative bodies in a desire to promote research it should hold out the highest encouragement for the future. Much might be said on the methods to be adopted by State governments and institutions in developing research, but our discussion, already too long, must be restricted to the question propounded and not to the ways and means by which the answer can be carried into effect. The further question of the duty of State-supported universities in regard to the publication of research was fully treated by Prof. J. C. Merriam in a paper delivered before the annual meeting of the Association of American Universities at Princeton in November, 1914.¹ In this paper Prof. Merriam clearly demonstrated the duty of State universities in this respect, as follows:

Problems concerning publication in State universities resemble those in institutions not supported by State appropriation, in so far as their relation to fundamental organization of graduate and research work is concerned. Differences develop through origin of activities bringing about a peculiarly close relation between State institutions and the communities by which they are supported. In many cases these activities vary widely from those generally recognized as pertaining to universities. The present moment finds us with one class of institutions, the State universities, in which the work may be directed to a large extent toward assistance in everyday business of the State, while other universities, feeling less intimately the fluctuation of community needs, may give themselves more largely to examination of the critical or fundamental principles of knowledge. The differences now apparent

¹ John C. Merriam, "State agencies of university publication," *School and Society*, vol. 1, No. 25, pp. 871-879, June 19, 1915.

may not be fundamentally necessary. The tendency is possibly toward similarity rather than toward divergence of university types.

Failure to secure adequate expression of results means that the investigator does not obtain full value for his attainment. The stimulus for work is diminished, and the staff of the institution fails to reach the desired stage of efficiency in leading graduate study.

The influence of home-controlled publications of a State university upon students of the graduate school is larger than is commonly recognized.

Our conclusion is that the duty of State-supported universities is the same as that of privately endowed universities in regard to the prosecution of pure research, no matter in what branch of learning it may be, and in regard to the publication of such researches, but the State university has the added duty of serving the State by undertaking researches which are called for by the needs of the community. The fact that in Wisconsin intensive cooperation of the university with the State in matters of research has led to a temporary misunderstanding and has produced deplorable complications for the university need be regarded only as a passing incident from which the State universities will emerge with a greater appreciation on the part of the people of the services they are rendering and the services which they are destined to render, not only to the State, but to our own American civilization and to civilization at large.

THE MUTUAL RECOGNITION OF ACADEMIC DEGREES, INCLUDING RECIPROCITY IN THE PROFESSIONS OF LAW, MEDICINE, DENTISTRY, AND EDUCATION.

By AUGUSTUS S. DOWNING,

Assistant Commissioner for Higher Education, The University of the State of New York.

At the outset I must say that the point of view in this, as in my paper entitled "State control of medical licensure," is the result of the experience of administration in the State of New York.

The president of one of our foremost universities has said:

We have to get away from the notion that the same name means the same thing in different countries. The graduate of the very best American high school would have fully four years of work before him in a German gymnasium if he were to go to Germany to complete his education; although the German gymnasium is generally ranked as a secondary school.

Let me amplify this caution. The girl graduate of the best American high school could not complete the 9-year course of a Prussian gymnasium in 12 years' time for she could not be admitted at all; they are for boys only. The English public school is not a public school in the American sense. The work in the college (*collège*) of France does not correspond to that in an American college any more than does that in the lyceum (*liceo*) of Italy or the institute (*instituto enseñanza secundaria*) of the Spanish colonies, which are classed as secondary schools.

In my endeavor to treat this subject from a standpoint helpful to the secondary and higher institutions of the American continent, I must at once focus attention on the distinctions that exist in the United States, and especially in the State of New York, between legal requirements and educational opportunities. New York State, by law, has not only protected the students and schools of the State by requiring that in the recognition of the students and schools without the State the students and schools of the State shall not be discriminated against, but it has also protected the public by standardizing the higher institutions and legalizing the degrees conferred by them.

Let me quote from the education law two provisions little known and hence not appreciated even by the executive officers of the higher institutions of the United States:

"(1) No individual, association, or corporation not holding university or college degree-conferring powers by special charter from the legislature of this State or from the regents, shall confer any degrees, or transact business under or in any way assume the name university or college, till written permission to use such name shall have been granted by the regents under their seal.

"(2) No diploma or degree shall be conferred in this State except by a regularly organized institution of learning meeting all requirements of law and of the university, nor shall any person with intent to deceive falsely represent himself to have received any such degree or credential, nor shall any person append to his name any letters in the same form registered by the regents as entitled to the protection accorded to university degrees unless he shall have received from a duly authorized institution the degree."

From these quotations it becomes at once apparent that New York State must, with some conservatism, approach the question of the mutual recognition of academic degrees, and must clearly understand the distinction between standards for admission to institutions and standards for admission to legal practice.

Recognition v. nostrification.—The acceptance by a university of the diploma of another university as of equal value with its own is a simple question when such acceptance does not involve the legal right to practise a profession.

Ad eundem gradum.—The admission of students by higher institutions can be granted readily when no legal obligations are involved. But when the degree carries with it legal rights, and the institution issuing the degree has legal obligations resting upon it, the problem becomes more complex, and nostrification based on a "favored-nation" clause proves an unsatisfactory solution of the several problems involved. New York State tried nostrification for medical degrees several years and abandoned it from the same reasons that proved unsatisfactory to Austria. From its enactment of the university law in 1787, New York has clearly differentiated these problems. That law placed the incorporation of higher institutions upon the regents of the University of the State of New York. From that date to the present they have chartered colleges of liberal arts and sciences with power to confer the baccalaureate degree. The same law contemplated the conferring of graduate degrees by the university. New York's solution of the problems of recognition is registration, and this paper will endeavor to outline plans for the recognition of secondary and higher institutions of the Western Hemisphere by the mutual recognition of the academic degrees registered by the educational authorities of the several States.¹ In this discussion the Western Hemisphere includes the greater political divisions of this Pan American Union and the other political divisions not at present members of the union.

The extent, limits, and possibility of mutual recognition.—To be of service the recognition must be mutual. It is also self-evident that there must be an entity if anything is to be recognized. But before discussing the status of education in the several States of America it is well to know the purpose of such recognition. Can a practical distinction be made between the migration of students from one State to another for the purpose of education only, as distinct from the purpose of residence? Some years since New York State was seriously concerned with this question and at present a neighboring Commonwealth is similarly involved. But the experience of France has been helpful. Under French law the diploma of the French university gave the right of practice; for example, medicine. But France, observing the academic freedom for admission to the universities of Germany, in 1897 modified her decrees thereby permitting foreign students to study in the French universities. Two classes of diplomas have since been issued—the State and the university. It is my opinion that such distinction can be intelligently drawn and students can be permitted to migrate from

¹ State is used as the political division having the direction of education in such division.

State to State for educational purposes with a view to their return to their own State for practice. This mutual recognition shall be institutional and not State.

The limits of this mutual recognition must be fixed by minimum institutional requirements and permanent authoritative administration.

The second of these factors is the more easily determined but the more difficult of attainment. Practically all the States here represented possess an educational agency for the evaluation of academic degrees, and the greater number of them have several. The difficulty lies in the determination of which of them shall permanently and authoritatively administer such evaluation and how the necessary cost of administration is to be provided. Let the State university attempt to fix standards and a stronger private university of the State makes serious objection or thwarts the attempt. Let an association make the attempt and it lacks authority. Let the stronger educational institutions ask for legislative sanction and the weaker institutions combine to prevent it. The department of public instruction may have jurisdiction over the teachers' licenses and have no responsibility for the lawyer's degree, the doctor's license, or the entrance requirements to the study of dentistry. A State bureau may have voluminous information and lack administrative experience and authority to act. These difficulties are not imaginary. They have been surmounted in New York State.

That these difficulties may be overcome in other States here represented there must be created some central agency that will equitably and authoritatively act for institutions of the first rank in the several States of this Union. By common vote of the Congress an organization composed of representatives of those States that have already an authoritative agency might be created to present a schedule of degrees to be accorded credit and a basis for proper evaluation of such degrees; such schedule and such evaluation to be accepted by all institutions in America until a future congress be convened, when such modifications could be made as might appear necessary.

Let us now consider the minimum institutional requirements on which acceptable evaluation must depend. For clearness of vision it is essential that here the ideals of the institution be set forth. In the words of President Sharpless, the purpose of American education is to create "a strong, self-respecting, well-informed, independent common man." New York believes that this can be best accomplished through vertical rather than horizontal classification. That is, the opportunity must be given every child in America to acquire the highest education it is capable of attaining, so that it may have the best education possible at the time when its formal education must end. The important units, then, for measuring an institution in evaluating its degrees are its permanency, the quality of instruction, student body, and its curriculum.

Higher institutions.—Institutions conferring academic degrees in America are higher institutions as distinguished from secondary and elementary. They are divided and subdivided into groups and classes: First, the colleges of liberal arts and sciences, classed as colleges for men, colleges for women, and colleges for both men and women; second, professional schools, classed as schools of theology, of education, of law, of medicine, of dentistry, *et al*; third, technical institutions, classed as colleges of engineering, of fine arts, of agriculture, *et al*; and finally universities—institutions empowered to confer degrees in special departments, as theology, law, medicine, arts, and sciences.

The first requirement of an institution, that of permanency, can be readily determined from its property and equipment, its receipts and disbursements, its location, and its competitors.

The second requirement, the quality of instruction, is necessarily determined by the scholarship, training, and experience of the teaching body.

The third requirement is a student body with capacity to receive the instruction offered.

Finally, the curriculum, that determines the extent, the duration, and the content of instruction.

Standards.—Inasmuch as the higher institution receives its students from the secondary, the standards maintained by the secondary institution necessarily affect the work of the higher. The American system of education as at present in process of development, having for its object the education of the common man, calls for a secondary school curriculum based on eight years of elementary preparation and four full years of secondary instruction. The four-year secondary preparation restricted by required and selective subjects is the basis for admission to the four-year course of the college or university. Sixteen years from the beginning of the compulsory period at the age of six is the present normal curriculum leading to the baccalaureate degree.

What recognition is possible between the institutions of the several States of the Western Hemisphere possessing in greater or lesser numbers such higher institutions maintaining in full or in part these standards? Manifestly the educational authorities of a State may properly admit to its higher institutions the students that possess an education equivalent to that required of their own students, provided that the credentials issued by the higher institutions shall be based in every case on at least one year of resident study, shall clearly indicate the course successfully completed, and shall distinguish plainly the "university degree" from the "State degree."

Registered degrees.—The higher institutions and the standards having been determined, attention must be directed to the variety of credentials now issued by the higher institutions of the first rank on the Western Continent. It is impossible to enumerate them in full because of their multiplicity and the absence of definite information from several States. It may suffice in this place to give the classes and numbers that have the protection accorded to degrees by the regents of the university of the State of New York under the education law. There are two in arts, three in philosophy, three in science, four in literature, three in theology, four in law, two in pedagogy, two in medicine, three in librarianship, two in music, and four in pharmacy. Some of these—for example, the M. A. and the LL. D.—are also honorary degrees. These degrees registered by the regents are given in schedule B.

The moment degrees are recognized as evidence of scholarship, at that moment they become an object of desire. Many lose sight of the scholarship which should always be represented in the degree in their eager desire for the honor that the degree implies. The inability to distinguish between the degree and the scholarship back of it led to barter in degrees that has given some institutions on the Western Continent an undesirable notoriety, but, like counterfeiting, such bartering ceases as intelligence progresses. It has now come to pass in institutions of the first rank that degrees granted for scholarship are clearly distinguished from their honorary degrees, and no higher institution is worthy of place in the first rank that will not subscribe to the agreements required for such recognition, and maintain the standards set for the degrees recognized. New York as a State has lists of institutions clearly entitled to recognition as of the first rank since the executive officer of each has not only formally agreed to meet the requirements for such recognition, but is also maintaining these standards. The methods found satisfactory by New York State in its relations to the 52 other political divisions of the United States may well serve for the formation of a list of colleges recognized by a central authority for all of the States of the Western Hemisphere.

Accredited higher institutions.—Scarcely had the problem been solved of determining colleges worthy of recognition when another problem was presented for solution. How could students in unrecognized institutions migrate to the recognized without

loss of time? The solution of this problem lay in accrediting such colleges. Rules are so framed that no recognized college shall confer a registered degree for the completion of less than a year's resident study in the institution conferring the degree. Not only does this protect the student ambitious to pursue his study in an institution of the first rank, but it affords the accredited institution an opportunity to strengthen its work and advance its requirements to meet those of the recognized institution. The same criterions are applied for determining both recognized and accredited institutions; and all institutions found unable to meet the requirements for recognition or accrediting are not listed, though the work completed therein may be helpful to the students in attendance.

Reciprocity in the professions.—Let us now turn our attention to the problems of the "State's" degree, using this term with the significance given it in my reference to the experience of France.

Can reciprocity in the professions of law, medicine, dentistry and education be instituted between the various educational States of the Western Hemisphere?

No, if reciprocity is based on a "favored nation" theory. For example, New York State can not admit to the practice of medicine or dentistry the licentiate of New Jersey simply because New Jersey admits to medical or dental practice the licentiate of New York. The New York statute specifically forbids this by establishing the condition under which applicants examined and licensed by other State examining boards may without further examination receive an endorsement of their licenses, viz., by the registration of such examining boards by the regents as "maintaining standards not lower than those provided by the New York statute."

Again No, if reciprocity means the free exchange of licenses regardless of the requirements actually met in their attainment. Pleading in the law courts of Chile will not necessarily prepare a man to practise law in the criminal courts of New York; the teacher holding an elementary license from the province of Quebec is not qualified thereby to teach French in a high school of New York State, even though the French language may be her mother tongue.

Can there then be no recognition whatever of the State's degrees?

Many have assumed that there can not be, but they are those that have been studying the problem from the standpoint of reciprocity based on the "favored nation" theory which assumes equality as the basis of agreement. New York has developed its agreements based on its statutes in accord with the phrase "maintaining standards not lower than." We can recognize training in law that is not lower than that required by New York State, while the other State may maintain higher requirements than those exacted by us. We can recognize the dental degree of a dental school without the State if it maintains standards plainly not lower than those maintained by New York. New York State does not compel the Harvard medical school to admit New York medical students if they do not possess the baccalaureate degree. And the college graduate of any college in the United States, registered by the regents as an approved college, can secure the college graduate certificate that is a license to teach in the schools of New York State. In this way the certificates of a registered higher institution can be accepted by New York State higher institutions for admission *ad eundem gradum* from any and every higher institution registered as maintaining standards not lower than those required by the New York statute. New York State maintains a list of the registered professional schools and annually publishes a synopsis of the requirements for admission to professional practice throughout the United States. The need for such an authoritative register of all higher institutions of various ranks both in the United States and of the other countries of the world is constantly felt and it would seem that the time is ripe for making such a list.

ABSTRACT.

I have endeavored to set forth from New York State's experience:

(1) Cautions: The same name does not mean the same thing in different countries; for example, secondary education.

A sharp distinction must be made between legal requirements and educational opportunities.

New York limits the conferring of degrees to higher institutions specifically chartered with that power.

Forbids the use of a registered degree by any person not entitled to the same.

(2) Recognition *vs.* nostrification a simple question when the legal right of practice thereunder is not at stake.

Ad eundem gradum—an easy matter when no legal obligations are involved.

New York tried nostrification which failed from the same reason that proved unsatisfactory to Austria.

The solution of the problem of recognition is registration.

This paper plans for the recognition of secondary and higher institutions on the Western Hemisphere.

(3) The extent, limits, and possibility of mutual recognition.

To be helpful must be mutual.

The purpose of such recognition.

The migration of students for purposes of education as distinct from purposes of residence or practice.

The limit of recognition depends on two factors:

(a) A permanent authoritative administering body.

(b) The minimum requirements met by the institution.

Minimum institutional requirements for acceptable evaluation.

Institutional ideals.

Purpose of American education—to create a strong, self-respecting, well-informed, independent, common man.

Opportunities must be provided for all to acquire the highest education possible at the time that education is complete.

Important units for measuring an institution.

Permanency, teaching force, student body, curriculum.

(4) Higher institutions—distinct from the secondary and elementary.

First group: Colleges of liberal arts and sciences.

Second group: Professional schools.

Third group: Technical institutions.

Fourth group: Universities.

The institution's permanency.

Determined by its physical equipment.

Its faculty.

Its students.

Its curriculum.

(5) Standards.

Secondary for admission.

Four full years of secondary instruction.

Based on eight years of elementary preparation.

Higher instruction in the liberal arts and sciences.

Four full years of college instruction.

Evidence of completion, the baccalaureate degree.

The educational authorities of a state may properly admit to its higher institutions the students that possess an education equivalent to that of their own students.

(6) Registered degrees: University credentials now issued by the higher institutions.

(7) Accredited higher institutions provide for the migration of students from un-registered to registered institutions.

(8) Reciprocity in the professions; education, law, medicine, dentistry.

Reciprocity in these professions can not be based on a "favored nation" theory.

Recognition can be accorded degrees earned in institutions maintaining not lower standards than the others for that particular degree.

Certificates can be accepted for admission *ad eundem gradum* by institutions maintaining standards not lower than those required for promotion.

An authoritative register of the higher institutions of various ranks in the Western Hemisphere a necessity.

A tentative statement of the requirements for admission to professional practice in education, law, medicine, dentistry.

The symbols of degrees that have protection accorded to the university degrees by the regents.

a, Arts:	f, Law:	j, Veterinary medicine:
B. A. or A. B.	LL. B.	B. V. S.
M. A. or A. M.	LL. M.	D. V. S.
b, Philosophy:	LL. D.	k, Librarianship:
Ph. B.	D. C. L.	B. L. S.
Ph. M.	g, Pedagogy:	M. L. S.
Ph. D.	Ped. B.	D. L. S.
c, Science:	Ped. D.	l, Music:
B. S. or B. Sc.	h, Medicine:	Mus. B. or Mus. Bach.
M. S. or M. Sc.	B. M. or B. Med.	Mus. D. or Mus. Doc.
D. Sc.	M. D.	m, Pharmacy:
d, Literature:	i, Dentistry:	Ph. G.
B. L.	B. D. S.	Ph. C.
M. L.	M. D. S.	Phar. D.
D. Lit. or Lit. D.	D. D. S.	B. S. in Phar.
L. H. D.		
e, Theology:		
B. D.		
D. D.		
S. T. D.		

THE LIBRARIAN: THE LIBRARY AND THE EDUCATION OF THE PEOPLE.

By LUTIE E. STEARNS,

Milwaukee, Wis.

"Thought is the first faculty of man; to express it his first desire; to spread it his dearest privilege."—*Reynal*.

Of all occupations or professions for women there is none richer in opportunity and fulfillment than that of the librarian. The mission of the modern librarian is to bring to all the people the books that belong to them. Those engaged in this mission have made it a science and a profession worthy to be ranked with that of teaching, law, and medicine. The old mission of the librarian was to preserve and conserve literature. The modern mission is to distribute as widely as possible the choicest thought of the greatest minds so that good ideas may become the burden of the common thought. The librarian's work begins with the very youngest child and takes him straight through to the end of his life, guiding and directing his reading in the earlier period and establishing a foundation upon which he may build for himself in

his later years. The modern librarian's particular care is for that large class of people who leave school before entering upon even the grammar grades or the high school, and who oftentimes become a menace to the community through lack of right ideas and occupation. James Russell Lowell, Ph. D., LL. D., D. C. L., rightly said, as Aristotle had said before him, that the best part of every man's education is that which he gives himself, and it is for this that the library offers the opportunity and the means. The modern library is a continuation school. Commencement day is no longer the educational "day of judgment" for the individual.

Ex-president Eliot, of Harvard University, sounded the very keynote of modern library thought and spirit when he said, "It is always through the children that the best work is to be done for the uplifting of any community." In this age of trash and printed wickedness, when a professor in one of our western universities feels tempted to say that the youth of this country would grow up to stauncher citizenship and better effort were they not taught to read; and when Frederic Harrison sees on every side "the poisonous inhalations of literary garbage and bad men's worst thoughts," which drive him to exclaim that he could almost reckon the printing press amongst the "scourges of mankind"; and when we know that the average school life of the child in the East does not exceed seven, in the West six, and in the South five full years, then it is we realize how important is the mission of the modern librarian. For many years children were barred from libraries altogether, under the cruel misapprehension that they might destroy the library's treasures. In 1878 a warm discussion took place at an International meeting of librarians, at which it was suggested that children be admitted to library privileges at 14 years of age, notwithstanding the clearly-proven fact that a child could read at 6 or 7 years. Then it was that Sir Redmond Barry arose to champion the rights of the child, and he suggested that if 7 years were to be cut off from the reading life of an individual that it would be better to cut off that period from the other end of a person's life rather than at the beginning of it. For many years, however, this old fetish remained, and it has not been until within the past 20 years that age limitations have been removed from modern libraries. Indeed, so important has the work for the children become, that we find children's rooms in libraries from Maine to California and from the Gulf of Mexico to Lake Superior, while there is a library school in connection with the Carnegie Library at Pittsburgh that is giving training to college graduates and others qualified for this particular work with children. The Cleveland (Ohio) public library offers a similar course, as do training classes in some of the other public libraries of the country. The regular library schools also place much emphasis on this important work.

The question of the selection of children's literature by the librarian has become a most serious problem. The days of the popularity of Oliver Optic, Harry Castlemon, and Martha Finley, all victims of their own popularity, are long since over, their works being relegated to nearby furnaces, while every effort is made to select only that which will rightly inform, inspire, or refresh. The modern librarian adopts many devices through which to interest the young. A story hour is held, at which charming stories are told to children to cultivate a desire for more of the same character. A taste for dime novels is transformed by judicious selection of books and wholesome literature into a love of a better class of literature without the "bloody" or improbable elements, the librarian, in this connection, ever keeping in mind the wisdom in the philosophy of "the expulsive power of a new affection." The girl who asks for a "sweet, sad, sob story" is led by the sympathetic librarian to choose something less hysterical and morbid and to revel in the joys of wholesome character-forming literature. Books by the thousands are sent to schools, beginning with the primary grades and extending through high schools, colleges, and universities, to supplement the work of the various grades and years and also to acquaint students while in school with the opportunities afforded to continue their education after leaving the schools. The modern librarian visits the various classes and gives instruc-

tive talks on the use of the library. The pupils are oftentimes taken to the library for practice in looking up reference material. The library plays an important part in the preparation of debates, oratorical contests, and the like. School libraries are sometimes transferred to public libraries to save duplication of material and to assist students in forming the "library habit."

The work with the foreign children is considered of the greatest importance by modern librarians, who give such children simple histories of America and lives of great men and women of patriotic achievement, thus building up a love of country and a desire to emulate the makers of America in ideas and ideals. The older foreigners are not neglected in this important educational work. Classes are held in assembly rooms of many libraries, at which lessons are given in English for beginners, books being loaned also for private study. Lectures are also given, oftentimes through interpreters, which aid in the succeeding examination for citizenship. Men's clubs are organized for frank discussion of the civic problems of the day, while lecture rooms are coming to be opened for the meetings of all classes of people, to enable them to "talk about the things they wish to talk about," of whatever nature they may choose. Nor are the women neglected by the modern librarian, who aids in the organization of study clubs that meet at the library, and receive much assistance from the librarian in the preparation of study outlines and the assembling of reference material for study. The problems which confront the governing boards of Nation, State, and city are not neglected. The Library of Congress at Washington places instantly at the command of our President material on all the vexing problems of government. The legislative reference department in connection with the Library of Congress supplies Senators and Representatives with lawmaking material. The legislative reference departments of our State governments, presided over by skilled librarians, are of vast assistance in the making of State laws, while municipal reference libraries, found at the present time in practically all of the leading cities of the country, furnish to local mayors, members of the common council, and city engineers a wealth of material on civic problems. In addition to all this, the modern librarian endeavors to keep in mind the wants of the lawyer, the doctor, the school teacher, the merchant, the clerk, and the laboring man, sending notices to those in various professions and occupations when new material is received at the library in which they may be interested. The librarian has special interest in the working men and the working women whose employments forbid the long walk to reach the library which must sometimes be taken after the working hours. To offset this disadvantage, the librarian establishes branch libraries all through the town in residence, factory, or business districts—wherever the people may be reached. Books changed at frequent intervals are placed in rest rooms of manufactories, or rooms specially provided for library quarters, with a trained assistant, who endeavors to supply workers with books which will make them more efficient along their particular lines, and also with happy, wholesome literature that will refresh them when their day's work is done. Books for the children are placed in candy shops, ice-cream parlors, and in public parks and playgrounds, while books for men will be found in billiard halls and other recreation centers.

The modern librarian, however, is not content with simply supplying the people within the immediate borders of the city. Under the county plan, now in operation in some of the States of the Union, notably California, the county is regarded as the unit of activity, the library being supported by a county appropriation, the books being sent out into rural districts as well as issued within the confines of the city. Traveling libraries, containing 25, 50, or 100 volumes, are located at rural post offices, general stores at the crossroads, country schoolhouse or rural homes, these books being exchanged at frequent intervals for fresh supplies. In the State of Delaware book wagons are now being sent about for house-to-house delivery of the books, this plan having originated in Hagerstown (Maryland), where Miss Mary L. Titcomb, librarian of the Washington County Free Library, has automobile delivery of books

to the farm houses, the specially constructed automobile carrying 300 or 400 books at a time, which are eagerly inspected by the rural residents of the county.

Parcel post is being used all over the country for the delivery of single volumes or bundles of books within the weight limitations, while the telephone has been found to be a most important and useful agency in answering questions which originate in offices, stores, private homes, and schoolhouses. One librarian in a little Kansas community, whose library is connected by a telephone with 27 rural schools, answered more than 1,600 questions in one year through this method.

The "Do-you-want-a-book" plan, in successful operation by the free library commission in Wisconsin, attempts to furnish the right book on any subject desired, at the right time, to any resident of the State for the mere payment of the postage, while many State libraries make practically the same offer.

The modern library should be regarded as one of the most democratic of institutions. It is obvious from what has gone before that the modern librarian's task is no sinecure, but should command the best endeavors of skilled minds in the accomplishment of the library's God-given purpose: The modern librarian oftentimes enters upon her work with as great consecration as a teacher or missionary. The best education obtainable is the foundation for the best work in library science and economy. To this should be added, if possible, scientific instruction in library administration, methods, and routine at one of the library schools of the country such as is afforded through the State library school at Albany, N. Y., the New York Public Library School of New York City, the Pratt Institute Library School of Brooklyn, the University of Illinois Library School at Champaign, the Syracuse University (N. Y.) library course, the Simmons College Library School at Boston (Mass.), the Carnegie Library School at Atlanta (Ga.), the University of Wisconsin Library School at Madison (Wis.), the Library School of Western Reserve University, Cleveland (Ohio), and the Carnegie Library School of Pittsburgh (Pa.).

The library profession demands catholicity of taste, which is, in a word, a recognition of the needs and rights of individuals in the selection of literature. Above all, the librarian should have a love for humanity and a willingness to serve all races and "all sorts and conditions of men." There are tremendous problems to be solved in the coming years—the problems of labor, land, liquor, race, war, women, leisure, education and government. The modern library, the "people's university," with the church and the school—the great educational trinity—together with the modern newspaper, must be the four great agencies that must work together for the promotion of the highest ideas and ideals in democratic government and citizenship.

THE NEW PROFESSION OF PUBLIC HEALTH NURSING AND ITS EDUCATIONAL NEEDS.

C.-E. A. WINSLOW.

Anna M. R. Lauder Professor of Public Health, Yale School of Medicine.

Many of the professions which play an important part in the social organism of to-day can trace their ancestry back through centuries, some of them even to the dawn of recorded human history. The doctor, the lawyer, the soldier, of the Athens of Pericles would be vastly puzzled by the technique of his modern representative; but he would find essential aims and general methods in the main familiar and comprehensible.

The sick-nurse may claim kinship with an equally ancient and equally noble line. As the lawyer owns a continuity of interests with Lycurgus and the physician with Hippocrates, so those who nurse the sick are carrying on the beneficent work of the

Deaconesses in the early Christian Church, and of the sisters of St. John, St. Francis, and St. Vincent de Paul, in mediæval times. Nursing in its original sense is one of the most ancient of all businesses; for as soon as mankind emerged from brutishness the care of the sick and wounded became a pressing need.

There is another group of nurses, however, engaged in work of a widely different character, work which has so little in common with the nursing of older days that St. Hildegarde would never in the world own its practitioners as her professional successors. I mean, of course, the Public Health nurses, who make up as I believe the nucleus of one of the greatest of future professions, a profession whose entire aim and method of approach is characteristic of the modern world.

The demand for the services of the public health nurse is an outgrowth of the shift of emphasis in the public health campaign from legal and restrictive to educational and constructive measures. Some important things like the purification of public water supplies can be directly accomplished by official action; and legal restrictions are and always will form an essential part of the control of communicable diseases. Yet it is more and more clearly recognized that the larger problems of health require the intelligent cooperation of the individual citizen. An increasingly greater proportion of the energy of public health workers is devoted to individual education in the sanitary and hygienic conduct of the daily life; and this direct educational work is mainly the task of the public health nurse.

We owe the conception of the community nurse perhaps first of all to Florence Nightingale, who gave this new branch of her calling the name "health nursing." We owe its practical working out in this country largely to our American Florence Nightingale, Lillian D. Wald. It was she who in 1902 introduced school nursing, recently inaugurated in London by Miss Honnor Morten, into the schools of New York City. The nurse placed in the schools by Miss Wald was so successful that \$30,000 was appropriated for an official beginning of the work in the following year. To-day 208 nurses are employed in school inspection by the New York City Department of Health, besides 59 infant hygiene nurses, 162 tuberculosis nurses, and 117 visiting nurses engaged in other fields of public health. So far as the betterment of the health conditions of school children is concerned the work of the nurse is now recognized as vital and essential because it is she who follows the children into the home and sees that the physician's directions are actually carried out. As has been said, the school doctor excludes the child from school, the nurse brings it back again. The percentage of physical defects actually treated among New York City school children was raised from six per cent to over 80 per cent by the introduction of the school nurse.

The application of the educational force of health nursing to the problem of tuberculosis was again due to the far-sightedness and organizing ability of Miss Wald. In this new field of social hygiene the nurse has come to play a more and more important part; for the campaign against tuberculosis is primarily a matter of individual conduct, care of the excreta on the sanitary side and rational treatment of the living machine on the hygienic side. The most direct and immediate method of attacking this complex problem lies along the line of personal instruction in habits of healthy living; and one of the greatest needs of the present day is for an increased force of tuberculosis nurses to detect the early cases which now so often escape treatment until too late. It is estimated that in the home of every recognized case of tuberculosis there will be found on the average one incipient case in the condition most favorable for treatment.

The third important field for the visiting nurse is in the reduction of infant mortality, one of the newest and one of the most hopeful of all forms of public health activity. It is clearly recognized to-day that there is just one effective way to cope with this great problem, the instruction of the individual mother, so that she may give her baby its normal food and may intelligently care for it in other ways.

The distribution of pure milk for which "milk stations" were originally founded is now entirely secondary to the organization of a baby clinic with its staff of nurses to do follow up work in the home. As Dr. J. H. Mason Knox has said:

In the last analysis, however, all our work hinges upon the better care of individual babies coming under our influence, and it is here that the trained nurse should be given the first place, both because of her unique opportunity and because of the good results which she has and does accomplish. It is she who enters the home, a welcome visitor, but one armed with expert knowledge and kindly act. It is she who can open the closed windows, remove superfluous clothes, prepare the baby's feedings, give it a bath as an object lesson to the mother, and perform a hundred other services which together mean the difference between life and death.

I have spoken of these three aspects of public health nursing which relate to infant welfare, tuberculosis and school hygiene as if they were distinct and independent specialties. This has often been the case in the past but the wisest leaders of the nursing profession as well as practical health administrators have come to recognize that specialization along this line has frequently been carried much too far. Friction and confusion result from the visit to one home of several different public health nurses and the large area covered by a nurse doing only infant welfare or only tuberculosis work causes waste of time and militates against intimate personal knowledge of family and social conditions. Public health nursing should be organized on the lines of localities rather than specialties so that the nurse may know her district thoroughly in all its aspects and may come to be a sort of community mother, a trained and scientific modern representative of the good neighbor who nursed the sick and helped out in all sorts of emergencies in the village life of earlier days.

In rural districts where the services of public health nursing are being carried by the rural nursing service of the American Red Cross any high degree of specialization is still more clearly impossible. These devoted women must be visiting nurse, tuberculosis nurse, infant hygiene nurse, sanitary inspector and welfare worker all in one. Above all they must be able and willing to teach, teach, teach. The following paragraph from the regulations of the Red Cross strikingly illustrates the breadth of the field which lies before them:

Rural nurses, although primarily responsible for the efficient care of patients, are expected to take an active interest in families, teaching by instruction and demonstration, the principles of hygiene as applied to their homes and surroundings, as well as of person. They should know the health laws and what opportunities exist in their community for the improvement of unsanitary and other unfavorable conditions in which their patients live. They should be informed upon social matters and avail themselves of educational advantages within their reach to enable them to meet more adequately the needs of their people. With the support of an able and enthusiastic committee, they have unlimited opportunities for constructive work through the homes, interested individuals, private societies, country schools and other public institutions.

Nurses are called upon to-day to serve as sanitary inspectors, as tenement inspectors, as probation officers, as teachers of hygiene, as hospital social service workers, as agents of charity organization societies and as welfare workers in large industrial plants. Prof. Adelaide Nutting, of Teachers' College, showed me some letters that came to her desk at the opening of the fall term this year and I shall cite extracts from them to show the sort of thing that is being expected of the nurse to-day:

Extract from a letter of a physician in a western city:

I am writing to learn if you can recommend a nurse who would be capable of teaching hygiene and sanitation in the public schools of this city, as well as do the work of a general school nurse. We would like a nurse who is mature and capable of teaching as well as doing the school nursing. There are about 3,000 pupils in the public schools here * * *.

Letter from a superintendent of schools in the South:

We do not have either a truant officer or medical inspection and school nurse in our school system. As a start toward these objects I am asking for \$—— from our board

of education, for a truancy officer, hoping to be able to get into that position a woman with training as school nurse, and have her do such school nurse work as she can in connection with her truancy work.

Extract from a letter from a superintendent of schools:

I have just been talking with _____, superintendent of schools. He wants a school nurse. * * * This is a new position and he is inclined to give the right woman quite a free hand. He says they have 1,800 children in the school and practically no foreigners * * *; wishes this school nurse to assist the physical-education instructor in medical inspection. During the year they conduct some Chautauqua work, where the nurse would have an opportunity to deliver lectures to the farmers' wives. They also have a summer school, where they emphasize domestic science, domestic art, and general industrial training. The nurse might be asked to supervise the playground activities, but this could be arranged later on. Mr. _____ wants to find a woman who is adaptable, who would be interested in remaining for some time; emphasizes social training and would like to find a woman of considerable enthusiasm as well as special training.

Letter from the president of a western normal school:

We are planning to secure a school nurse for the coming year. Our enrollment this year was 214. We have from 75 to 90 girls in the dormitory. In addition to taking care of the health of the girls in the dormitory, we shall desire the nurse to take charge of the physical education of the young women and also of the medical examination and general school health of the children in the training school, numbering about 150. We shall also expect her to have about one class per day in the normal-school department along her line. Probably this will seem enough for her to do, but if possible we should like to have her take up the problem of health and necessity of medical examination in the rural schools and will assist her in making such investigations as she may see fit.

Letter from a physician on the staff of a hospital in one of the large eastern cities:

During the past year I have been developing a clinic for the investigation and treatment of diseases of metabolism in one of the large hospitals in _____ along lines similar to the work carried on in the _____ and _____. Our work thus far has been confined to the treatment of diabetes mellitus and nephritis.

The board of managers of the hospital are very much interested in the work, which has been productive of the most gratifying results. Thus far I have been greatly handicapped because of the lack of knowledge on the part of the pupil nurses of the principles of dietetics and the elementary principles of metabolism, and even more handicapped by the fact that we have no teaching nurse who is able to instruct the pupil nurses. It is my plan to secure an educated, trained nurse who will come into the hospital, supervise the care of the patients in this ward, and also act as a teacher in the nurses' training school. The position will be one of dignity and will carry with it a reasonable salary. The board of managers of the hospital has instructed me to negotiate for such a teacher. I am appealing to you for assistance in securing such a person. Will you kindly let me know if any of your graduates or present students are or will be available for such work?

It is quite clear that the woman who enters the field of health nursing to-day is called upon to perform duties of a diverse sort, differing in marked degree from those performed by the bedside nurse of a past generation—to such a degree indeed as almost to constitute this a new profession. Yet it is clearly to the nurse rather than to the physician or the social worker that we must turn for the application of this new form of social energy.

In the first place the nurse is a woman and as such is preeminently fitted for the function of health educator. Patience and tact are primary requisites for the task of bringing the principles of hygiene into the life of the tenements; and neither of these is a masculine quality. In the second place the nurse has at least the fundamental basis of technical knowledge needed. She knows the human body and its reactions to external conditions and to the hygienic conduct of life. She approaches these questions from perhaps a better standpoint than even the physician since her training leads her to view the human mechanism as a unified whole, her vision of which is not distorted by preoccupation with special pathological conditions. It must be remem-

bered that in most small and in many large places the only public-health nurses are those employed by visiting nurses' associations who combine educational work with sick nursing; and however socialized and preventive the work of the public-health nurse may be she must be ready at a moment's notice to forget the community of to-morrow and relieve with her own hands immediate physical distress. Her influence for more fundamental things rests upon her power to meet these instant needs. For this reason the social worker without a nurse's training can never fill the place of a nurse who has gained the broader vision of social service.

While the education of the nurse lays the best type of foundation for the career of the personal public-health educator it becomes increasingly manifest that this foundation must be laid much more broadly and deeply than is the case at present if she is properly to fulfill her difficult function.

Public-health nursing, like any other educational work, requires a particularly sound training in fundamental principles. The public-health nurse should be well grounded in the fundamental sciences of chemistry, physics, and biology, for these sciences form the basis for all scientific thinking and all scientific applications. She should know something of the principles of sociology and economics for her work closely correlates at every point with that of the social reformer. Foreign languages are of the greatest importance; in any given case knowledge of Italian or German or Yiddish may be absolutely essential. I heard recently of a case where Chinese was a requisite. These subjects (elementary science, elementary sociology, and if possible some foreign languages, with the training in English so essential for the writing of reports and the educational work of the inspector) are vital cultural or nontechnical elements in the training of an efficient public-health nurse. The requirements of high-school graduation before entrance upon the course of the nurses' training school seems a very moderate minimum of preliminary general education for the nurse who is planning to enter the field of public health. The present class of nurses in the Massachusetts General Hospital in Boston includes 19 graduates of first-class colleges and 17 graduates of normal schools. Thirteen or 14 of these women speak French, 9 speak German also, and several Italian as well. The Presbyterian Hospital of New York has 12 college women in its training school at this time, while out of 200 students in the Johns Hopkins Training School 25 have university degrees.

The next problem is the nature and scope of the course to be given in the training school itself. It is a matter of common knowledge that few such schools are to-day in a position to give to their pupils the training necessary to fit them adequately for the work of health nursing. Over a thousand such schools have come into existence since 1890, but their establishment has often been inspired less by educational ideals than by the desire to obtain unpaid assistance in the routine work of the hospitals with which they are connected. Too often standards of admission, which are of such importance in a profession demanding unusual physical and mental and personal qualifications, are sacrificed to the need for student nurses to do the work. Too often the applicant, once admitted, is subject to severe conditions of overwork and underfeeding and poor living accommodations. Always there are the educational weaknesses inherent in an undertaking which is not primarily educational in aim. The course is apt to be carelessly planned, the teachers those who chance to be available, the teaching what they happen to find it easiest to give, and the laboratory equipment hopelessly inadequate. Most fundamental of all is the problem of time. It is absurd to attempt to train the nurses we need for the public-health campaign by a course which involves two or three hours a week of theory and 50 to 60 hours in the wards, not hours of clinical instruction, but for the most part a routine of unenlightening and exhausting manual work. The relation between the hospital and the training school should be a symbiotic one; it more nearly resembles a case of simple parasitism.

The committee of education of the league for nursing education has outlined a standard curriculum which calls for a total of 675 hours of theoretical instruction, 360 hours to be concentrated in a preliminary period of four months with no work in the wards, 75 hours in the second half of the first year, and 60 hours in each of the other four half years. This curriculum includes 60 hours of anatomy and physiology, 30 hours of bacteriology, 30 hours of chemistry and physics, 15 hours of hygiene and sanitation, 90 hours in cookery and nutrition, and 30 hours in household economy, in addition to the more technical courses in the nursing subjects proper. This outline is by no means Utopian, yet it is probable that not over 5 per cent of the training schools are at present offering anything like this amount of theoretical work.

Finally, the specific training in public-health science remains to be considered. This superstructure, needed to convert a nurse into a public-health nurse, is much the same as the training needed to make a physician into a public-health physician. It requires, first, a general course or courses in public health, sanitary science, or municipal sanitation, or whatever it may be called. This should include the principles governing the spread of communicable disease; the sources and vehicles of disease, the relation of nuisances and plumbing to health; the disposal of sewage and garbage, the problems of water supply and milk supply and food supply in relation to health; the effects of dust and heat, and the regulation of atmospheric conditions; the broad fundamentals of school and tenement and factory hygiene; the principles underlying isolation, disinfection, and serum therapy in the control of communicable maladies; the relation of insects to disease; epidemiology and the organization of State and municipal health departments. Vital statistics should receive special attention in this course. The value of the nurse's work, both to her own locality and to the general cause of public health, will be enormously enhanced by accurate record keeping and intelligent statistical analysis.

Secondly, the public-health nurse should make a special study of social problems, with due consideration of underlying causes and an analysis of existing practical agencies of relief. Thirdly, it will be of great advantage for her to extend the knowledge of dietetics and home economics gained in the training school; and, fourthly, special courses in psychology and educational method will greatly increase her usefulness.

These theoretical courses should be supplemented by practical field work in ordinary visiting nursing, in school nursing, tuberculosis nursing, and infant-welfare work and, where possible, perhaps by elective field work in sanitary inspection, food inspection, housing inspection, and industrial hygiene.

Progress in the higher branches of nursing education has made encouraging strides during the past few years. There are at least eight different institutions now offering graduate courses to public-health nurses in Atlanta, Boston, Boulder (Colo.), Chicago, Cleveland, New York, Philadelphia, and Santa Barbara, Cal., besides special courses offered by the State Health Departments of Kansas and Ohio.

The department of nursing and health at Teachers' College in New York, specially endowed by Mrs. Helen Hartley Jenkins and directed by Prof. Adelaide Nutting, is the strongest and most fully developed of these schools. It has a departmental faculty of five professors and instructors, with eight special lecturers attached to the staff, and offers to graduate nurses programs of study of one or two years' duration in teaching in schools of nursing, administration of schools of nursing, hospital administration, public-health nursing, school nursing, and teaching and supervision in public-health nursing. The courses offered in Boston by the instructive district nursing association occupy either four or eight months. The public-health household economics and educational aspects of the subject are taken up at Simmons College and the sociological problems in the school for social workers. The Chicago course, the most recent adventure in this field, is offered by the school of civics and philanthropy and covers a period of 16 weeks, including classroom work in the school, visits of

inspection to social agencies, and field work under the supervision of local public-health nursing organizations.

Such graduate schools for public-health nursing are likely to develop rapidly and to approximate more and more nearly the standard which has been set by Prof. Nutting in New York. The great task of the moment seems to me to be an improvement of standards in the nurses' training school itself. The need for such improvement in the elementary training of nurses of all classes was forcibly set forth by Dr. F. P. Denny, of Boston, in the *Boston Medical and Surgical Journal* for June 18, 1903. It has been urged by Dr. Richard C. Cabot and Mrs. Hunter Robb in this country and by Dr. Oldfield in England; and the superintendents of progressive training schools are making a gallant struggle toward these ideals, in a few cases with the support of farsighted trustees.

As a rule, however, the immediate needs of the hospital, for which the training school was historically created, quite overshadow the new opportunities and responsibilities which have developed in the field of public health. For a fundamental improvement in the situation I am inclined to agree with Prof. Nutting that—

“In the best interests of both hospital and training school some reconstruction of (the present) system is necessary; that much of the teaching, especially all of that fundamental work included in the preparatory course now given in the hospital, should be given outside of it in a central school, which could do for a number of hospitals what each one is trying to do for itself; and that this central school should take upon itself the direction of the education and responsibility of arranging with different hospitals for the practical training of the pupil in all the various services. In other words, that the training school should rest upon a foundation not unlike the medical school.”

All of us who are interested in the profession of nursing realize the debt of that profession and of the public to the hospitals which have done so much for nursing education. Yet an educational institution should be organized for educational purposes and not as an adjunct to an institution for healing the sick. A few independent training schools, free to develop as leaders, would exert a more powerful influence upon the whole progress of nursing education than perhaps any other force. I understand that a definite movement is under way for securing an endowment for the training school at Johns Hopkins. I trust that it may succeed and that this example may be followed elsewhere; for the establishment of such schools is in my opinion a vital essential in our future campaign of public health.

THE COLLEGE WOMAN AS A SECRETARY.

By MARY SNOW,

School of Commerce, New York University, New York City.

The occupation of being a secretary is not easily described or classified. Every stenographer thinks she is a secretary, but every secretary knows the gulf that lies between the two professions. Most secretaries, however, have at the beginning of their careers been stenographers and having arrived at secretaryship find it impossible to define the place when they ceased to be the one and became the other. Therefore it is fair to assume that the line of demarcation is not sharply drawn. This being evidently true it is impossible to describe the profession of secretaryship without starting with stenography, out of which secretarial work usually grows.

It is true that some conspicuously successful secretaries exist who know no stenography and who have never felt its lack, but they are so few in the great mass that this paper will be confined to the group who have passed by natural and inevitable steps from one to the other.

A secretary is a person who to a greater or less extent takes charge of the correspondence, compiles material for spoken or written matter, collects data and assembles it in usable form, and takes memoranda of speeches or interviews for another person. The secretary may have but one of these duties, but more often all. The stenographer, like the trained nurse, must follow instructions to the letter, presenting verbatim copy perfectly transcribed. She is valuable in direct ratio to the perfection of her technique. The secretary must have a quite independent will, resourcefulness, a well-furnished mind with prompt reactions, and the ability to get the "message to Garcia." Both must have the temperment of cheerfulness and agreeability though the heavens fall, a calamity which will occur all too frequently.

In the 1910 United States census secretaries and stenographers numbered 263,315. Of this great army at least 95 per cent qualified with the art of stenography. The secretarial section possesses every variety and amount of education from graduation (or even less) from elementary school to post graduate collegiate degrees.

The profession of stenography is standardized only as far as it demands a knowledge of shorthand and the technique of transcribing on the typewriting machine. Entrance to a school for stenography is perfectly possible for anybody who can read and write. The youngest student observed was 12 years of age and entered from Grade VII of the public schools.

The schools themselves are of every possible type of efficiency and inefficiency. There is a vast number which without quality or any superiority and mental equipment on the part of the staff, prey upon the army of graduates of the elementary schools, diverting them from the very excellent courses offered by the public high schools by representing gain in time and alluring with groundless promises of employment on finishing. The State should scrutinize these schools with strictest exaction as to standard and quality of what is offered. No greater injustice exists than the extortion of money from the poor on the shallowest of promises.

Grading upward from these are schools of various standards of efficiency, well tested by organizations employing their graduates, until the university itself undertakes the task with characteristic enrichment and thoroughness. The technical high schools have assumed the function of training expert stenographers and are successful in direct ratio to the culture, teaching power, and idealism of the head of the department.

The flooding of the field with the army of graduates from all these sources has brought about an economic condition of excess in supply which has cheapened the whole group. The college woman who enters, however, brings a unique equipment. She often has one or perhaps two available sciences. She has at command another language. She has been trained to follow subjects back to their sources and she has above all been disciplined into thinking straight. The employer who is seeking strength soon realizes this and she is swiftly drawn from stenography into secretarial work. Superior education has given her a short circuit to which the high-school graduate slowly climbs step by step.

The stenographer with power and imagination in an advertising department or firm similarly goes rapidly from the machine to the writer's desk. The history of the great number of women who are writing the advertising matter which we read so diligently as we ride in the street cars starts from the stenographic notebook to an almost incredible extent and passes through secretarial work to the writing of advertising matter. Environment and the occasional crowded desk of her chief have forced the woman to draw on her originality, imagination, and initiative, and she has become an advertiser by the law of evolution.

The woman with meager education who has risen to a secretarial position has possessed a mind which has been first of all receptive and elastic, and after that, industrious. The stenographer who aspires to a secretaryship can never arrive without

these qualities. She must see endless possibilities in a somewhat mechanical profession and recognize opportunities which will qualify her for a much more independent original and interesting thing than mere stenography. Nothing is more puzzling to the stenographer than the reasons for selection from her ranks of women who shall become secretaries. The choice does not apparently base itself on superior technique, faithfulness, or the ability to accomplish a vast amount of work. Much heart-burning results from this inability to understand the difference between the stenographic and the secretarial mind. The stenographer who does not increasingly understand and master the background against which she is working will never become a secretary. The secretary must enter into the whole professional experience of her chief. She must have exceptional intelligence toward the past, present, and future of the undertakings which are in progress. She must have refinement of understanding which reaches into every implication of office procedure. She must be innocent of nerves, fatigue, or boredom. If she has all of these qualifications she will be a pearl of great price, ethically and financially. Her rewards will have various forms. She will be conscious of being vital to all situations, she will have the intellectual delight of completely understanding, and she will have a salary of from \$1,500 to \$3,000. She would have twice or thrice this sum if she were a man, but she must pay the heavy money tax imposed upon her sex.

There is a tradition that the temporary stay of women in business makes it economically unsound to pay them what they are worth in positions of responsible management. Laura Drake Gill has made a very convincing study of the comparative stability of women and men in occupational life which completely sets aside this theory.

It is a striking fact that the more education the woman has had the farther she removes herself from "Business." Curiously enough she does not regard publishing houses as such and goes eagerly to them. Doubtless her own conscious debt to the world of books is very real and yet so intangible that it seems more an obligation of the soul than of the purse. At the Intercollegiate Bureau of Occupations in New York during the year 1914-15 the distribution of 337 secretaries was as follows:

Social and religious organizations.....	74	Hospitals.....	5
Schools and colleges.....	59	Public service corporations.....	5
Publishing houses.....	34	Manufacturing and mills.....	5
Private individuals.....	30	Banks and trust companies.....	5
Advertising and business.....	30	Department stores.....	4
Research and science.....	16	Insurance and real estate.....	4
Physicians' offices.....	12	Theaters and moving pictures.....	3
Authors and professors.....	12	Civic organizations.....	2
Woman suffrage.....	9	Employment.....	2
Architects, engineers, landscape architects, and interior decorators.....	8	Consulates.....	2
Law offices.....	8	Importers and exporters.....	1
Clubs and associations.....	6	Newspaper office.....	1

Advertising makes a very strong appeal to the college woman's imagination when her ambition is to write. She has tried her power on the college publications and on the papers of her home town. The advertising woman whose name is legion has recommended secretarial work with advertisers as the entering wedge. It is evident from the list that many of the aspirants have followed this counsel zealously and have placed themselves "in line."

It will be seen from the list, noting the exception of publishing houses and advertising, that the college woman has conspicuously avoided business in its commercial sense. Whether business has rendered itself unattractive by its characteristic methods, or whether liberal educational training has rendered her inaccessible to any appeal which carries an implication of sordidness, is a matter which can not be argued here. The fact remains that the experience of the Intercollegiate Bureau shows that business likes her but that she does not like business. She wants something which is based upon an idea more fundamental to human happiness than the mere making of money.

The opportunities she has chosen offer less money reward but the difference is too insignificant to be considered.

Another study of college women who are in secretarial work which covers a group of nearly 1,000 alumnae shows the following distribution:

Per cent.	Per cent.
With social organizations..... 30	With hospitals..... 5
With schools..... 20	With libraries..... 5
With publishing houses..... 8	With widely scattered organizations..... 21
With banks..... 6	100
With private individuals..... 5	

In the League for Business Opportunities for Women in New York City there is a secretarial section. These women are superior in character and power and are on whole noncollege in education. The college women of this section are but 3 per cent of the group. They distribute themselves thus:

Per cent.	Per cent.
With corporations..... 22	With doctors and engineers..... 5
With lawyers..... 20	With schools..... 5
With banks..... 20	With widely scattered..... 1
With social organizations..... 17	100
With miscellaneous business..... 10	

The average salary which the college group reports is, \$1,109. The range is from \$500 to \$3,000.. The average is much lowered by a number who with total disregard of economic and social values naively name absurd money rewards, adding that they are "conscious that the salary is very low but the position is very congenial."

The salaries of the noncollege group doubtless are at a somewhat higher average since these women are associated to a greater extent with business organizations.

The college woman is valued as a secretary because of her general intelligence, the refinement which is an almost invariable result of scholarly contact, her resourcefulness and easily available power in research and her devotion to the matter in hand rather than to her own comfort or joy. Her social life is elsewhere and the office is a place for complete concentration and accomplishment.

One of the tragedies of "downtown" life is the spectacle of the meagerly educated girl who finds there her social opportunities. Her chatting, her coquetries, and her diffused power are gauges of the poverty of her outside social life. There is pathos in the exhibition but it is disconcerting to an office. To the girl who has had a more generous and satisfying life this is an utterly unknown temptation and the economic equation alone of having highly trained people is so obvious to the business and professional employer that the supply of college women is entirely inadequate to the demand. It is small wonder then that the process of training her into secretarial efficiency has become a fine art and worthy of the power of the university.

RELACIONES MÉDICAS EN LAS AMÉRICAS.

Por CARLOS MORALES MACEDO,

Médico y Cirujano de la Facultad de Medicina de Lima, Perú.

Las antiguas universidades de la América Latina, nacidas en un régimen casi conventual, exclusivamente dedicadas después a formar un grupo de gentes de elevada cultura, han iniciado desde hace pocos años una nueva orientación en su vida: comienzan a ponerse en contacto inmediato con el pueblo, para extender así su acción bienhechora a todas las manifestaciones de la vida nacional. .

La influencia de la clase intelectual se extenderá como elemento de cultura popular, aún más de lo que ahora está como fuerza política.

Al procurar un íntimo contacto entre los hombres y las instituciones universitarias del Nuevo Mundo, este Congreso Científico encarna al mismo tiempo la más elevada y la más eficaz idea de panamericanismo.

El bello ideal de la solidaridad intelectual de las Américas, encuentra en las ciencias médicas un vasto campo para su realización en el futuro. Apoyan esta idea, no sólo el carácter universal de la medicina, sino también la circunstancia de existir problemas médicos de interés americano.

El descubrimiento de América enriqueció a la terapéutica con valiosos productos medicinales, reveló la existencia de enfermedades desconocidas y dió margen a importantes trabajos científicos. La investigación de la flora medicinal de América, el conocimiento de su geografía médica, el estudio de ciertas enfermedades endémicas, la solución de grandes problemas de higiene pública, etc., interesan a los pueblos de todo el continente.

Aparte de estas razones, creemos que la intimidad de relaciones entre los médicos de ambas Américas, imprimirá rumbos saludables en la enseñanza, en la producción científica y aún en la práctica profesional.

Nuestras relaciones médicas están muy lejos de haber adquirido el grado de intimidad y estimación recíproca que merece el adelanto de la profesión en las dos Américas. Nos desconocemos mutuamente. Puede decirse que hoy, como ayer, las noticias de las importantes contribuciones científicas de nuestros colegas norteamericanos, nos llegan a Sud América por conducto de Europa.

Débase ésto a que la profesión médica ha nacido y se ha desarrollado con orientaciones muy diferentes en ambas Américas.

Aunque la medicina se enseñó de manera doctrinaria desde principios del siglo XVIII en las viejas universidades españolas de la América Latina, su reorganización sólo data de los tiempos de la independencia sudamericana. Se reorganizó su enseñanza de acuerdo con los sistemas franceses que estaban muy en boga en aquella época. Progresaron las ciencias médicas bajo la influencia francesa, que se mantuvo casi exclusiva hasta fines del pasado siglo. En la época actual comienzan a acentuarse tendencias más eclécticas; los jóvenes viajan buscando su perfeccionamiento profesional donde mejor pueden encontrarlo y la práctica médica se regula bajo influencias muy variadas.

La organización centralizadora de las escuelas médicas en la América Latina, donde un sólo cuerpo docente lleva el control de la profesión en todo el país, los estrictos requisitos para la admisión de estudiantes, los sistemas de enseñanza encaminados a proporcionar una vasta ilustración científica en un plazo no menor de cinco años, han logrado mantener al médico en un grado de avanzada cultura intelectual, haciéndolo digno de la estimación social y de la confianza pública.

En los Estados Unidos, la instrucción médica, pródigamente esparcida en numerosas universidades y escuelas especiales, se ha desarrollado en una orientación más técnica que cultural. Tratándose de una profesión en la que interesa más seleccionar el personal que aumentar su número, este sistema no hubiera dado buenos resultados si la profesión médica no hubiera estado organizada de manera admirable.

Numerosas sociedades médicas—entre ellas la "American Medical Association," para no citar sino a la más grande—muy bien dotados institutos de investigación científica y sobre todo una prensa médica en la que se cuentan órganos de merecido prestigio mundial, han sabido hacer una selección entre los médicos prácticos, han estimulado su producción intelectual y la han dado a conocer en los grandes centros europeos.

Actualmente la medicina norteamericana contribuye al progreso de la ciencia con importantes investigaciones originales y especialmente con las más ricas estadísticas de cirugía operatoria.

En la América Latina, el magnífico plan de enseñanza que domina en las escuelas, la meritoria labor de muchos institutos de medicina e higiene y la privilegiada posición

social de los médicos, sostenida por relevantes méritos personales, ofrecen gran contraste con la deficiente organización de la profesión misma.

Las sociedades médicas todavía no han extendido mucho su benéfica influencia y las publicaciones periódicas (salvo alguna excepción) carecen de la fuerza necesaria para introducir en la literatura médica circulante los escritos originales que publican. Es frecuente ver aparecer en los órganos de la prensa médica latinoamericana, estudios de indiscutible importancia científica, que están condenados a una circulación muy reducida, sin que de ellos se den cuenta en el extranjero, y sin que ni siquiera queden catalogados en la ciencia para que puedan servir de referencias a posteriores estudios sobre el mismo tema.

En el siglo presente, se acentúa más cada día la tendencia a reemplazar el trabajo aislado de los hombres, por el establecimiento de grandes organizaciones, en las que muchos individuos cooperan al mismo fin, con relativo sacrificio de su personalidad. Esta tendencia crece rápidamente en todos los ramos de la actividad humana y extendiendo su acción a la profesión médica.

Es necesidad imperiosa para el progreso de las ciencias médicas en los países ibero-americanos, una organización que corresponda a la ilustración y señaladas aptitudes de los hombres que allá las cultivan. Deben constituirse sociedades de vasto radio de acción y grandes publicaciones periódicas, que patrocinen y estimulen la producción científica original.

A ello pueden contribuir los médicos de los Estados Unidos, por medio de la extensión hacia la América Latina de sus grandes sociedades médicas, concediendo así a sus colegas latinos los privilegios y las ventajas de una asociación íntima; por medio de un activo intercambio de publicaciones entre los principales centros científicos americanos; y creando una gran revista que lleve el control de toda la producción médica en América, dando cuenta de los trabajos originales publicados en los pequeños periódicos y sirviéndoles así de introducción en la literatura médica universal.

Con el apoyo de las precedentes consideraciones, someto a la aprobación del Congreso los siguientes votos:

(1) El Segundo Congreso Científico Panamericano, emite el voto de que las sociedades médicas de América extiendan su organización y concedan los privilegios de sus socios a médicos de todas las Repúblicas americanas.

(2) El Segundo Congreso Científico Panamericano, recomienda el activo intercambio de publicaciones médicas y la creación de una gran revista, destinada a dar cuenta de todos los trabajos médicos originales y a patrocinar su introducción en la literatura médica circulante.

AGRICULTURA CIENTÍFICA OU ENSINO AGRICOLA NO BRASIL.

Por LUIS FREDERICO SAUERBRONN CARPENTER,

Rio de Janeiro, Brasil.

Os congressos científicos pan-americanos prestariam aos paizes da America do Sul, e especialmente ao Brasil, relevantissimo serviço, si conseguissem popularisar, largamente divulgar, nesses paizes, o que é o ensino agricola nos Estados Unidos, o que em prol delle têm feito o Governo Federal e os Governos dos Estados, as escolas que têm sido creadas, os estatutos e programmas dessas escolas, a contribuição de tal ensino para o alto grau de adiantamento da agricultura norte-americana e riqueza e bem-estar da nação, os ideas que devem ter em vista os demais paizes das Americas, á luz da experiencia dos Estados Unidos, afim de obterem para os seus campos e as suas lavouras a prosperidade que lhes está reservada.

No Brasil, é doloroso confessal-o, a agricultura tem sido considerada uma mera occupação material, um mero trabalho ou serviço braçal, e dahi a causa do seu atrazo.

Quando em 1889 cahiu o Imperio, legou (este) á Republica duas escolas de medicina notaveis (uma na cidade do Rio de Janeiro e outra na cidade da Bahia), duas faculdades de direito celebres (uma na cidade de São Paulo e outra na cidade do Recife), duas escolas de engenharia afamadas (uma na cidade do Rio de Janeiro e outra na cidade de Ouro Preto), um conservatorio de musica e uma escola de bellas artes, ambas na cidade do Rio, das quaes sahiram artistas que se immortalisaram.

Entretanto, o Imperio não legou á Republica uma escola de agricultura.

Dito isto, está dito tudo, no que concerne ao atrazo em que sempre ficou no Brasil a agricultura, a fonte da sua prosperidade economica.

Com effeito, das duas escolas de medicina sahiram medicos e pharmaceuticos para todo o vasto paiz; as duas escolas juridicas prepararam os advogados e os juizes encontrados em toda a extensão do solo; nas duas escolas de engenharia se formaram todos os engenheiros disseminados nas empresas particulares e repartições publicas.

Quão grande falta não fez a manutenção, ao lado dessas escolas, de uma escola de agricultura, que, por todo esse tempo que durou o Imperio, houvesse mandado agricultores para os campos do Brasil!

Que seriam a medicina e o direito no Brasil, sem aquellas quatro escolas superiores, duas medicas e duas juridicas? Nada.

Que devem, no Brasil, a medicina e o direito, áquellas quatro escolas? Tudo.

No Brasil, ao lado dos medicos diplomados ha os individuos que se entregam ao exercicio da medicina sem previos estudos serios e de um modo quasi completamente empirico: são os chamados *curandeiros*. E tambem, ao lado dos advogados diplomados ha os *rabulas*, que tratam de causas perante os tribunaes, e que aprendem a profissão, porque foram por muito tempo empregados em algum escriptorio de advogado ou em algum cartorio judicial, sem que, entretanto, tenham qualquer cultura juridica.

O exercicio da medicina pelos curandeiros é acto criminoso pelo codigo penal brasileiro e os rabulas advogam perante os tribunaes porque, illudindo a lei que exige a assignatura de advogados nos articulados e arrazoados forenses, obtêm de algum advogado diplomado que lhes assignem os seus trabalhos.

Mas é facil de imaginar o atrazo em que estariam no Brasil a medicina e o direito, si estivessem entregues nas mãos dos curandeiros e dos rabulas.

Não é, pois, de causar extranheza que o Brasil, que nunca teve ensino agricola organizado, não tenha tido tambem, nunca, agricultura scientifica, agricultura progressista e prospera.

O decreto federal 8319 de 20 de Outubro de 1910 creou o ensino agronomico no Brasil, plano de que era a cupola uma grande escola superior de agricultura, a qual foi pouco depois creada na cidade do Rio de Janeiro, pelo decreto federal 9857 de 6 de Novembro de 1912, entrando a funcionar e abrindo as suas aulas em 1913.

O plano do decreto 9857 e as condições em que foi installada a escola superior de agricultura soffreram vivos ataques e, sobrevivendo a crise financeira com a qual está a braços o paiz, foi no corrente anno supprimida a mesma escola, em cuja installação o governo gastara quanticeas sommas.

Por consequinte, mais uma vez falharam os planos de se encetar uma guerra de morte á agricultura rotineira, que infelicitou o paiz.

Nos 20 Estados de que se compõe o Brasil, e no Districto Federal, pouco ou nada têm os poderes publicos feito a favor do ensino agricola, salvo o Estado de São Paulo, indubitavelmente o mais progressista de todos, o qual vae seriamente cuidando do assumpto, tendo, na sua bella cidade de Piracicaba, a escola de agricultura do Estado, denominada "Luiz de Queiróz," o benemerito cidadão que lançou os seus fundamentos e depois a doou ao Estado.

Em 1907 o Dr. Joaquim Nabuco, então embaixador do Brasil nos Estados Unidos, contractou para dirigir a referida escola o Dr. Clinton De Witt Smith, formado pela Universidade de Cornell (1873), e a esse director a escola deve assignalados serviços.

O problema do serviço agrícola é, segundo pensamos, um daquelles que, no Brasil, está reclamando solução mais urgente.

E todas as energias e sacrificios que fossem postos em contribuição para o conseguimento do magno desideratum, seriam fartamente recompensados.

Nesse sentido tivemos occasião de dirigir, ha poucos dias, ao Ministro da Agricultura, Industria e Commercio a seguinte petição:

Exmo. Sr. Ministro da Agricultura, Industria e Commercio:—O abaixo-assignado, natural da cidade de Friburgo, Estado do Rio de Janeiro; lente cathedratico, por concurso, da antiga faculdade livre de direito desta cidade, candidato classificado em dous concursos perante essa faculdade e em outro perante a Escola Naval de Guerra; membro effectivo do Instituto da Ordem dos Advogados Brasileiros, autor de varias obras juridicas e advogado nos auditorios desta cidade; candidato á cadeira de agricultura na Escola Superior de Agricultura desta cidade, cadeira que não chegou a ser posta em concurso por ter sido extincta a mesma escola;

Considerando: Que na lei do orçamento para 1916, já approvada na Camara dos Deputados, na despesa do ministerio presidido por Voss Excellencia ficou consignada a verba de 300:000\$000, para subvenções e auxilios a escolas, estabelecimentos ou instituições, assim como a particulares que tenham produzido trabalhos materiaes ou mentaes que interessem á agricultura, industria e commercio, sem que possa, entretanto, exceder de 50:000\$000 annuaes nenhuma das subvenções ou auxilios que devam ser concedidos pelo Governo;

Considerando: Que poucos paizes do mundo se podem ufanar de ter, como o Brasil, um solo tão vasto, tão fecundo, tão propicio a toda a sorte de culturas;

Considerando: Que a industria extractiva, a industria da criação do gado e a industria agricola propriamente dita são, no Brasil, de exploração a tal ponto vantajosa que sábia e prudentemente exercidas, poderão, dentro de alguns annos, arrancar-o da condição de paiz de finanças avariadas e eleva-lo á situação de paiz em que a abundancia do ouro seja uma realidade;

Considerando: Que ainda quando dirigidas por mãos habeis que encham de recursos as arcas do Theouro, as finanças publicas não são menos illusorias desde que pobre seja a população, sendo certo que drenar para o Theouro, por meio das taxas e dos impostos, as riquezas dos particulares, outra cousa não é que empobrecer ainda mais a nação;

Considerando: Que a agricultura rotineira só tem servido, neste grande e futuroso paiz, para levar a ruina e o desanimo no seio da classe dos lavradores;

Considerando: Que no dia em que os lavradores brasileiros chegarem á convicção de que a agricultura não é um mero serviço braçal a que qualquer póde dar desempenho satisfactorio e cabal, uma vez que o dava outr'ora o miserando escravo analfabeto e embrutecido; de que, pelo contrario, a agricultura é uma sciencia, é uma profissão nobilitante, tanto mais que as chamadas profissões liberes, profissão em que o braço forte do trabalhador não póde agir com acerto e com lucro sinão quando a serviço de uma mente illuminada pela sciencia;

Considerando: Que, nesse dia, terá raiado a era nova da agricultura brasileira;

Considerando: Que nem a União Federal, nem os Estados, nem os municipios têm ligado ao problema da fundação de escolas agricolas a attenção que ella merece, de modo que raras são essas escolas atravez de um territorio tão vasto, como é o do Brasil;

Considerando: Que, ao contrario do que fôra para desejar, nem nas escolas primarias, nem nas secundarias, é o ensino da agricultura considerado disciplina obrigatoria;

Considerando: Que é, pois, de toda necessidade pôr nas mãos do agricultor pratico, do trabalhador dos campos, os livros escriptos em linguagem popular e que ensinam os processos modernos de agricultar nos paizes em que (como os Estados Unidos da America do Norte, por exemplo) a agricultura não é apenas um trabalho braçal que mais não alcança que uma miseravel subsistencia para o trabalhador e sua familia, sim é uma profissão scientifica que leva o bem-estar, o progresso e a riqueza á face risonha dos campos;

Considerando: Que ha bons livros que equivalem a bons professores e a boas escolas, isto em qualquer das espheras da actividade humana, e nomeadamente em agricultura;

Considerando: Que taes livros não se encontram no Brasil, nem em lingua portuguez, si bem que sejam dignos de menção e do mais elogioso applauso a "Cultura dos Campos," do Dr. Assis Brasil, edição da Sociedade Brasileira para Animação da Agricultura, já em terceira edição (1910); o "A B C do Agricultor," do Dr. Dias Martins, lente da Escola de Agricultura do Estado de São Paulo (1908), etc., por onde se vê que os homens mais eminentes do paiz e os Estados mais prosperos da Federação têm as vistas voltadas para o magno assumpto;

Considerando: Que a traducção de taes livros para o vernaculo, e a aua vulgarisação pelos habitantes dos campos, é o maior serviço que, de prompto, pôde ser prestado á agricultura do paiz;

Considerando: Que nos dias que correm, pelo progresso das artes graphicas, os livros, ainda os mais caros, são os objectos de menor preço, porque, tão necessarios ao homem como o pão que alimenta ou o vestuario que esconde a nudez, uma vez só se adquirem e duram toda a vida, por mais que sejam manuseados e utilizados;

Considerando: Que o dispêndio que o Governo da Republica effectuar com a escolha, traducção, impressão e vulgarisação de taes livros, poderá ser coberto e resarcido por uma modica taxa que cobrará da venda de cada exemplar;

Considerando: Que, mesmo de todo gratuita a distribuição de taes exemplares, de nenhum modo se diria improductiva a despesa dahi resultante, uma vez que ella redundaria na incrementação da agricultura no paiz, beneficio esse tão grande que, á vista delle, desaparece aquella despesa, por insignificante e ridicula;

Considerando: Que a vulgarisação dos bons livros é um dever dos governos e dos estadistas, e foi por essa razão que o Presidente Roosevelt escreveu a Charles Wagner, o autor da Vida Simples e de outras obras, dizendo: "prêgo os vossos livros aos meus compatriotas," e em dous discursos publicos retumbantes, um em Philadelphia, outro em Bangor, recommendou aos seus patricios a leitura da Vida Simples, convidando depois a Charles Wagner de vir da França á America, onde, a 22 de novembro de 1904, no grande theatro de Lafayette Square, em Washington, o apresentou ao publico, começando o seu discurso com as seguintes palavras: "é esta a primeira e será tambem a unica vez que, durante a minha presidencia, apresento um orador a um auditorio. E sinto-me felicissimo de o fazer nesta occasião, porque si ha um livro que eu deseje ver ler como tratado interessante, por todo o nosso povo, é a Vida Simples, escripta pelo Sr. Wagner;"

Considerando: Que o abaixo-assignado, ao tempo em que se preparava para disputar em concurso a cadeira de agricultura na Escola Superior de Agricultura, recém extincta, teve occasião de adquirir, para o seu estudo, os melhores livros sobre o assumpto, publicados na França, Italia, Inglaterra, Allemanha, e Estados Unidos;

Considerando: Que o abaixo-assignado reputa de primeira ordem, sobremaneira interessantes, da maxima eficiencia para o progresso da agricultura brasileira os tres livros norte-americanos "O Estado e o Agricultor," L. H. Bailey; "Agricultura Practica," C. C. James; "Agricultura Moderna," T. B. Collins;

Considerando: Que será de obvia utilidade para a agricultura do paiz uma indicação bibliographica copiosa e selecta dos melhores livros modernos sobre o assumpto, de modo que os agricultores que manejem as linguas estrangeiras os possam pedir aos seus livreiros e, outrosim, de maneira que a iniciativa privada se estimule na traducção de obras estrangeiras, com proveito pecuniario para os traductores e auditores, e com inestimaveis beneficios para a agricultura nacional;

Considerando: Que no systema tributario adoptado pela Constituição da Republica, o imposto de importação ou renda das alfandegas é a mais quantiosa das parcelas da receita federal;

Considerando: Porém que o imposto de importação, desde que ultrapasse os limites de mero recurso fiscal, tem o grave inconveniente de produzir no interior do paiz o phenomeno ou flagelo da carestia da vida;

Considerando: Que sendo por demais elevados os nosos actuaes impostos aduaneiros, a nossa importação é muito menor do que seria si esses impostos fossem sensivelmente mais baixos, não representassem sinão um mero recurso fiscal ou financeiro, isto é, uma exigua porcentagem do valor dos objectos importados;

Considerando: Que é erro pensar que o desenvolvimento da importação empobrece o paiz, drenando para o exterior o ouro que deveria ficar no interior; porquanto, o melhor meio de augmentarmos a nossa exportação e obtermos um saldo della sobre a importação, seria justamente importarmos de maior numero de paizes do mundo o que elles nos pudessem vender por preço commo, afim de que pudessemos estreitar o commercio com esses paizes, mandando-lhes em pagamento as mercadorias e productos que a nossa industria extractiva, pastoril e agricola podem obter por preços inferiores aos das industrias congeneres desses paizes;

Considerando: Que, realmente, devemos proteger algumas industrias manufacturadas que utilizando materias primas que são verdadeiras especialidades e immensas riquezas do paiz, produzem objectos manufacturados que dentro do proprio paiz encontram largo consumo;

Considerando: Porém, que essa protecção não precisa chegar ao ponto externo do proteccionismo alfandegario, que gera represalias por parte dos outros paizes, sim deve revestir outras formas mais brandas e razoaveis, como—a isenção completa de imposto aduaneiro sobre o material e machinismo importado para a installação da fabrica e sua conservação e funcçãoamento; a isenção do imposto predial e de qual-

quer outro imposto gravando a propria fabrica; a isenção do imposto de industrias e profissões e outro qualquer recahindo sobre o fabricante; a tarifa especial reduzida nas estradas de ferro e outras vias de communicação; a preferencia nos fornecimentos officaes, etc.;

Considerando: Que as nossas actuaes tarifas aduaneiras equivalem a uma condemnação, que pesa sobre todo o povo brasileiro, de se abster dos beneficios e conforto da civilização moderna, sendo triste de notar, aberto qualquer catalogo de fabricas ou estabelecimentos commerciaes estrangeiros, que uma variedade immensa de objectos manufacturados, cada qual mais util, só deixa de estar em nossas mãos, por causa das barreiras oppostas pela alfandega, que cobraria, de imposto de importação, a metade, outro tanto, o dobro do valor do proprio objecto;

Considerando: Que fomentada e excitada a agricultura, tomando vulto a exportação dos nossos productos das industrias extractiva, de criação e agricola, crescendo em consequencia tambem a nossa importação de objectos manufacturados, bastaria um imposto aduaneiro meramente fiscal para encher as arcas do Thesouro Publico, e o esqualido espectro da carestia da vida se desvaneceria no espaço como um anel de fumo, entrando o bem-estar e o conforto na vida das cidades e na vida dos campos, e averedando o paiz, sem mais vacilações, pelo caminho da prosperidade material e economica, levantando-se e adquirindo maior expansão todas as forças vivas da patria, inclusive o intellectual e o moral dos seus filhos estremecidos;

Isto posto, o abaixo-assignado vêm fazer a esse Ministerio, por Vossa Excellencia presidido, a seguinte proposta: de assignar contracto com o mesmo ministerio, obrigando-se a entregar no correr do anno de 1916 os originaes da traducção dos tres sobre-mencionados livros norte-americanos, mediante uma modica subvenção a cada uma das ditas tres traducções passando para o Governo a propriedade literaria das traducções e não se reservando o abaixo-assignado outro direito que o de que fique impresso em cada exemplar que foi elle o traductor da obra, por contracto firmado com esse ministerio.

Parecendo ao abaixo-assignado que a sua presente proposta consulta os interesses do paiz, e da causa publica, espera deferimento.

RESUMO.

Terminando, submettemos á discussão e votação do congresso as seguintes conclusões:

1. O congresso deve adoptar um voto applaudindo a conveniencia de ser popularizado, na America do Sul, o que, nos Estados Unidos, o Governo Federal e os Governos dos Estados têm feito em prol do ensino da agricultura, maxime as escolas que têm creado, os estatutos e programmas dessas escolas, os laboratorios para analyse de terras e de productos agricolas e para estudo de molestias que atacam as plantações e o gado. Para essa popularização ou vulgarização talvez possa prestar grande serviço o Boletim da União Pan-Americana.

2. O congresso deve adoptar um voto applaudindo a conveniencia de, pelo Governo dos Estados Unidos, ser tirada sempre, ao lado da edição em inglez, uma edição em hespanhol, do Yearbook of the Department of Agriculture, para ter longa diffusão na America Central e na America do Sul.

3. O congresso deve adoptar um voto applaudindo a conveniencia de, pelos autores e editores norte-americanos, ser tirada sempre, ao lado da edição, em inglez, uma edição em hespanhol, dos livros que interessarem á agricultura, afim de que, mandados para as livrarias dos demais paizes das Americas, possam ter nellas procura e venda, uma vez que a lingua hespanhola é falada em todos os demais paizes americanos, excepto o Brasil, onde, alias, pela sua semelhança com a lingua portugueza, é perfeitamente comprehendida por qualquer homem do povo.

AGRICULTURE IN SECONDARY SCHOOLS WITH SPECIAL REFERENCE TO THE STATE OF MINNESOTA.

By A. V. STORM,

Professor and Chief of Division of Agricultural Education, University of Minnesota.

The last hundred years practically covers the period during which any effort has been made to teach agriculture through the educational institutions of America. The beginnings were very meager and consisted of an attempt on the part of college teachers

of chemistry to relate that subject to agriculture. Progress in the science of agriculture has necessarily followed in the wake of the development of the fundamental sciences upon which agriculture has had to rely for its scientific character. So slow was the progress that over one-half century passed before any State succeeded in establishing permanently a college of agriculture.

The honor of this beginning belongs to the State of Michigan, which established its State college of agriculture in 1857, five years before the Morrill Act was passed granting Federal aid for the establishment of agricultural colleges in the several States.

Courses in agricultural colleges for the first quarter century of their establishment under Federal aid possessed but meager content of a scientific character, and not until the Federal act of 1887 (25 years after the first Morrill Act), granting aid for agricultural experiment stations, did the real scientific character of agricultural college work begin.

During the next 25 years, in addition to the discovery of the scientific agricultural truth and the teaching of this to resident students, there gradually developed the practice of members of the teaching faculty and station staff carrying the results of their investigations out to the nonresident students in the form of extension work. The value of this knowledge to those actively engaged in the farming operations; the recognition that much of this was capable of being learned, appreciated, and applied by students with less than agricultural college entrance preparation; the increased interest in the general sciences and later in the science of agriculture, accompanied by the reaction against the exclusively academic character of secondary instruction, gave impetus to the movement to introduce into the curriculum of secondary schools instruction in agriculture.

From the beginning of this agitation to the present time there has been a divergence of opinion upon the question of whether this subject should be taught in special schools organized for that purpose, and devoting themselves quite exclusively to that end, or whether the subject should become a part of the curriculum of the regular public high school already established.

Though the teaching of agriculture in secondary institutions has not been fostered by Federal grants, the fact that the agricultural colleges were themselves developed through Federal aid lead many to think that secondary agriculture should be established in special schools as collegiate agriculture had been in a large measure. In secondary agriculture, as in the many other subjects now found in the secondary curriculum, the early teaching began in privately endowed institutions. Such institutions have always been of great help in furnishing a probationary existence for new subjects seeking admission to publicly supported institutions. This paper will, however, confine itself to agriculture as found in the publicly supported secondary schools.

The State of Minnesota was the pioneer in establishing, under State authority and with state-wide jurisdiction, the first secondary school of agriculture supported by public funds as a regular public institution. The school of agriculture at University Farm, St. Paul, Minn., was established Thursday, October 18, 1888, and since that time has grown until the enrollment for the year 1914-15 was 875. This is a strictly secondary school entirely distinct from the college of Agriculture maintained on the same campus. The college requires for entrance the completion of a full four-year course of an accredited high school, while the school requires only the completion of the eighth grade. The college course is in length full four years of nine months each, while the school course is only three years of six months each. The college course opens to students many positions in teaching and research, as well as scientific farming, while the school aims to train its students for further practical work on the farm. A similar school was established by the State at Crookston in 1906-7, and another at Morris, 1910-11. These schools have since prospered, having in 1914-15 an enrollment of 179 and 133, respectively.

Other States have from time to time sought to meet the need of agricultural instruction by establishing special schools serving more limited areas than do the schools of Minnesota, for example: Alabama and Georgia, congressional districts; Wisconsin, counties; Oklahoma, judicial districts; while some of these special schools have prospered and most of them have been of much value to a limited number of people, their histories have demonstrated that they possess elements of weakness which have limited their development and, in some instances, caused their decline. By the time public sentiment was ready to consider seriously the introduction of agriculture into the curriculum of the regular public schools, some of the weaknesses of the system of special schools had become sufficiently apparent to cause thoughtful people to hesitate in the establishment of any great number of them in any one State.

When the legislature of the State of Minnesota, convened in its 1909 session contemplated increasing the number of special secondary agricultural schools for the State, better counsel prevailed and the now famous Putnam Law was passed appropriating \$25,000 annually for the biennium to pay special State aid to 10 regular public high schools that should be selected by the State high school board. These schools were to maintain departments of agriculture, home economics, and manual training and were to be reimbursed by the State for two-thirds of the amount expended annually for the establishment and maintenance of such departments, with the maximum amount for which the school could be reimbursed fixed at \$2,500. The administration of this law was placed in the hands of the State high school board and its inspectors, this board having the right to make rules and regulations covering the details of the conditions to be fulfilled in obtaining this State aid.

This board made regulations governing the conduct of these special departments, some of which had much influence upon the success of the venture, e. g., requiring that the teacher of agriculture should be a man educated in a College of Agriculture and should be employed for the full twelve-month year.

So successful were these 10 schools during the biennium that when the legislature met in 1911, the number of Putnam schools that might be established was increased to 30 and a provision made (in the Benson-Lee law) whereby another type of regular public high school maintaining a department of agriculture and also either a department of manual training or of home economics, should receive special State aid to the amount of \$1,000 annually, provided that amount were spent for this purpose. The designation of the particular schools to receive this special aid was made a duty of the high school board, a body that, since its establishment by statute in 1878, has had the administration of the State aid. During this biennium the board designated enough schools to make the number of Putnam schools 30 and the number of Benson-Lee schools 75, a total of 105 public high schools receiving special State aid for maintaining a department of agriculture and also either one or two other vocational departments during the year 1912-13.

The legislature in 1913 removed the number limit on the Putnam schools, and increased the amount of aid to the Benson-Lee schools from \$1,000 to \$1,800. Under these conditions 40 Putnam schools and 96 Benson-Lee schools received aid during 1913-14, a total of 136, and 39 Putnam schools and 108 Benson-Lee schools, a total of 147, during 1914-15.

The legislature of 1915 made some marked changes in the system of granting aid. All differences between Putnam and Benson-Lee schools were repealed and special State aid was granted for each of the subjects, agriculture, home economics, and manual training separately, and special aid was added for commercial work. The schedule of special aid is as follows: Agriculture, \$1,000; home economics, \$600; manual training, \$600; commercial training, \$600. It is provided that in no instance shall the aid be more than the salary of the special teacher employed for that subject. Under these provisions the board has designated as authorized to strive for the special aid during the year 1915-16 the following numbers of schools, viz, for agriculture,

176; for home economics, 214; for manual training, 125; for commercial training, 48; the total number of schools being 230.

In many States the efforts to increase the knowledge of agriculture has taken the form of compelling teachers to be examined in agriculture in order to obtain a public school teacher's certificate, or of compelling the public schools by a general regulation, to teach agriculture, or by both of these. Such provisions are usually not executed in good faith. If they are, they usually result in an academic and impractical procedure which compels the public to establish special schools of agriculture in order to have the subject taught in a practical manner. Minnesota has avoided this error. No teacher has been compelled to take an examination in agriculture in order to obtain a public-school teacher's certificate. No public school has been compelled to include agriculture in its course of instruction.

Every public school in Minnesota that teaches agriculture does so in response to a local decision. Many of them do so without hope or expectation of State aid. Those that request aid and that fulfill the requirements of the statutes and the rules of the high school board receive aid.

This paper deals only with the State aided schools. When we know that no public school in Minnesota has ever been ordered or asked by any State authority to teach agriculture and no teacher has ever been compelled to take an examination in agriculture to obtain a public school certificate, our attention may well be directed to the conditions which have caused 176 schools to establish in six years special departments of agriculture and to maintain them sufficiently well to receive, under the restrictions of the statutes and the high school board rules, the special State aid for efficiency in this work.

A few of the conditions that have made secondary agriculture succeed in the regular public schools in Minnesota are fundamental and inherent in the situation. Minnesota is emphatically an agricultural State so far as the interests of the masses of the people are concerned. Even its large and rapidly increasing participation in commerce and finance is dependent upon the agriculture of the great Northwest, of which it is the eastern gateway. While its iron-ore interests are greater than those of any other State in value, they concern directly both the present and future prosperity of relatively few people compared with its agricultural interests. The people of Minnesota are, by inherent character, by early training, and by present interest, devoted to progressive public education. They constituted the progressive members of these older countries of northern Europe and older States of northern United States who emigrated from those regions, bearing with them the high ideals of public-school education held in their native localities. It is easy for such a people to see that the public schools should be supported in giving boys and girls an education that will better adapt them to their environment. It is to this factor that we are indebted for the remarkable financial, as well as social, support that is given to the movement for agricultural education in the public schools. Many are prone to think the great amount of State aid paid to the schools of Minnesota is due to her large permanent school fund. While this fund is large—being at present approximately \$25,000,000 and increasing at approximately \$1,000,000 a year—the income from this (and from a few other sources), amounting to between five and six dollars per scholar annually, is distributed to the districts on the basis of the number of scholars who have attended 40 days or over during the year. The amount received is regardless of the kind of school maintained by the district or of any particular kind of work done therein. Special State aid to districts maintaining a school of a certain standard or school work of a certain kind was appropriated by the legislature for the year 1914-15 to the amount of \$1,962,975. This money came from the same State funds from which came the various other appropriations voted by the legislature. This special State aid is not permanently appropriated but is subject to the action of each biennial session of the legislature.

The desirability of having the child live in his own home during the years devoted to his secondary education will always be a powerful argument in favor of maintaining agriculture in the regular public high schools rather than in special schools, which, of necessity, must be relatively few in number, and consequently remote from the homes of a great majority of the students. This is true in most of the States of the northern United States, and particularly in Minnesota, where there are 446 public schools giving high-school work. Since this State has few cities, most of these schools serve agricultural communities. With transportation, public and private, now available, few secondary-school students need to sleep away from home in order to obtain an education.

Agriculture in the regular public high school is the beneficiary of all those advantages which, since the beginning of education in America, have developed in and around the public school because of its having been an institution subject to local control. Save in the most general features, in which the State educational officers have a certain amount of supervisory authority, mention of which will be made later, the local people, school board, and school superintendent have as complete control over the agricultural work in the public school as they have over the more conventional subjects therein. If the advantages of local control of education are large and numerous, as the American public is firmly convinced that they are, it may be easily conceived that in a democracy agriculturally situated the regular local public secondary schools are destined to prevail ultimately over any type of special secondary school as a means of teaching agriculture to the great mass of students.

In many of our States, however, there may be need for many years of a very limited number of special schools well located with a large geographical unit for financial and educational support that shall devote themselves to practical agricultural technology largely for the benefit of those persons who have reached the post-secondary-school age. Such schools should distinctly recognize their service to be that of finishing vocational schools and not preparatory or prevocational schools.

Another reason for the growing popularity of the secondary agricultural work in the regular school is that the strong course in agriculture which it offers does not necessitate the exclusion of other subjects which students of regular secondary school age (13 to 17 or 14 to 18) should pursue. The standard secondary school course in the public schools of Minnesota contemplates that one-fourth of the student's time for four years be spent in agriculture, one-fourth in English, and the other half be devoted to the regular high school course in civics and history, science, manual training, mathematics, or other high school subjects. This course gives a good preparation for intelligent citizenship, or, if wisely selected, will admit the student to the various colleges of the university, including the college of agriculture should he care to attend. One of the serious handicaps under which many special schools labor is that the course is too narrow, limited, and purely vocational for those who attend. This is especially true in those schools that rely upon a small geographical area for the students and for that reason obtain them when they are too young.

To the student who is of regular secondary school age the advantage of pursuing other than agricultural studies is augmented by the advantage of attending school with other than agricultural students. This democratic feature of the regular public secondary school has added to the growth and popularity of the school as an institution for secondary agricultural education.

Another condition found elsewhere, but especially marked in Minnesota, is the administrative capacity of the superintendents of the city and town schools. Familiar with the administration of State aid, long established in Minnesota for other school interests, these men have developed into more than simply supervisors of the pedagogy of the schools and have become business managers of the educational plant as well. This has brought them more fully into contact with those business men and citizens

in the community who were most interested in agriculture when it was introduced. So when the demand came to have agriculture taught, and practically taught, in the regular public high schools, it was not necessary to begin de novo the transformation of a purely academic superintendent into a practical business man. That process was well under way. It only remained to direct, amplify, clarify, and apply the practical ideals he already possessed.

Among other conditions local to Minnesota that have contributed to the success of public secondary school agriculture are administration by the State high school board and their inspectors and the State department of education, and the many results of their wise rules and regulations supplementing the statutes. They require that a man, to be a teacher of agriculture in a school receiving State aid therefor, must be a graduate of a standard agricultural college having pursued a well-balanced course and shall have had 15 semester hours of professional preparation in teaching of which 3 shall be methods of teaching agriculture and 3 practice teaching of agriculture under supervision. The board must employ him for the full year of 12 months, his year to begin August 1. He is to have at least one-fourth of each school day free from school duties to devote to community (extension) work. Besides this he may use his nights and Saturdays and, of course, his three summer months for community service. He can not teach any other subject than agriculture in the schools without loss to the school of such a fractional part of their State aid as the time so devoted is a part of his total time.

Adequate room for laboratory and class work with adequate equipment are required. The Putnam schools were required to have at least 5 acres for the use of the agricultural department and all schools are urged to have some land. The district is expected to furnish transportation for the teacher when he is doing his extension work, and this expenditure is recognized as a legitimate expenditure for which the school may be reimbursed within the limit of the maximum amount of aid-granted.

The rules require that each school must offer as many full years of agriculture in the high school as the school has been receiving aid for this work until three years of agriculture is offered though the school may go on to four full years, as many of them do. The rules require that one full year shall be devoted to agronomy, one full year to animal husbandry, and that soils, horticulture, farm mechanics, and farm management shall be provided for. The resulting four-year course is usually as follows: First year, agronomy; second year, animal husbandry; third year, soils and horticulture; fourth year, farm mechanics and farm management.

Seventh-grade or eighth-grade agriculture or both are to be given at least 80 minutes per week. If the high school maintains a normal training class, this class is expected to take some work in agriculture. Besides their regular courses each school is required (unless excused for cause by the inspector) to maintain a three months' short course in the winter for those not in the regular school.

The following statistics taken from the 1914 reports of the high-school and graded-school inspectors will be of interest:

Enrollment in short courses.

	Number of schools not having short courses.	Number of schools having short courses.	Number enrolled in agronomy.	Number enrolled in manual training.	Number enrolled in home economics.
\$2,500 schools.....	8	30	508	457	251
\$1,500 schools.....	23	76	699	577	195
Total.....	30	106	1,192	1,034	446
Average.....			11	10	9

The statutes provide for the association of rural districts with a central school offering agriculture and the rules encourage this association. Rural districts are allowed to associate and yet to continue their own existence. Associated schools usually send the older children to the central school and keep the younger ones in the rural school, though some transport all of them. The rural associated school receives the benefit of the supervision of the superintendent of the central school and of instruction from the teachers of agriculture, home economics, and manual training employed by the central school. Each central school is given \$200 State aid annually for each rural school associated with it and each rural school receives \$50 annually for associating. This novel compromise between consolidation and complete isolation has proved, in most instances, very advantageous.

The use of land in connection with secondary agriculture, when wisely managed, has proved successful. In the beginning many failures resulted from wrong conceptions of the purpose of this land and of the results to be obtained. No 5 or 10 acre plot can be made a farm where a farm, in practical usage, usually means from 80 acres to many hundreds of acres. To try to make a model farm or to make this land laboratory produce profits like a farm, was a perversion of its legitimate purpose. And as a model farm it necessarily failed. As a source of financial profit, one half of the plots failed, as they should have done, and the other half succeeded financially, which is presumptive evidence of their having partially failed educationally. Where the land has been considered an out-of-doors laboratory for the students and incidentally for the nonstudents of the community, the purpose being to yield an educational profit, and where the instructor has had clear ideas of what can be done successfully thereon, it has succeeded. The number of schools voluntarily maintaining plots is as great as the number required by law to do so, and more schools are providing them each year.

A few facts about these plots may be of interest. Information obtained in the spring of 1915 is as follows: Of the 52 giving information on size, 18 have less than 5 acres; 22 have from 5 to 10 acres; and 12 have from 10 to 40 acres. On 69 of them demonstrations were made as follows: Alfalfa, 47; rotation, 13; potatoes, 9; clover, 7; garden, 5; weed eradication, 5; orchards, 3; other forage crops, 2; fence posts, 1. Pure-seed production was carried on as follows: Corn, 25; wheat, 10; oats, 8; barley, 7; potatoes, 5; rye, 1. Production of laboratory material was a part of the work on 44 plots, variety tests on 37, fertilizer tests on 22, and school gardens on 22.

The amount and kind of extension work vary greatly with different men and different surroundings. Making addresses at farmers' meetings of various kinds; organizing farmers' clubs; conducting agricultural work in rural schools; supervising home projects of students; directing demonstration work on farms; conducting boys' and girls' clubs and contests; preparing and installing exhibits; judging at fairs, shows and contests; directing interchange and purchase of seed grains, breeding stock, etc.; organizing cow-testing associations, breeding associations, and similar producing organizations as well as cooperative marketing organizations; rendering personal assistance and giving counsel to individual farmers upon such things as erecting silos, spraying, drainage, stock buying are some of the forms the teacher's activity takes. For means of transportation for this work he may use an auto, motorcycle, or horse owned by himself or by the district or rented from a livery. The district meets the expense by paying the livery bills as they occur, paying the maintenance if owned by the district or the teacher, or paying mileage or a flat sum if owned by the teacher. In a few instances the man's salary is made larger with the understanding that it includes transportation. The annual salaries of the men range from \$1,000 to \$2,000, only a few of which include transportation.

While the wise provisions of the statutes and the rules of the high-school board have brought direct results of great value, perhaps their greatest result has been the indirect one of attracting and retaining highly efficient men as teachers of agriculture.

"As the teacher, so is the school." The Minnesota State aid, State inspection, and State rules and regulations, with the conditions which these have developed, make an appeal to a sturdy, practical, efficient class of men that mere academic service, wholly inside the walls of a schoolroom, would not be able to attract.

High salaries, 12 months' service, an opportunity to work with the adult farmers, the vital contact of school work with real rural life, freedom from teaching other than agricultural subjects, an opportunity to be a man among men, to be not only in the community, but to be of it, the outlook of a permanent tenure of increasing usefulness, the preparation it gives for other doors of opportunity which stand invitingly open, such as county agency, college teaching, farming for oneself, farm managing, Government service, and the various activities in agricultural merchandising—these, together with the high standards of attainment required for entrance to the service, have brought to the work a body of men whose sound sense, practical point of view, broad preparation, confidence in their work and enthusiasm insured a large measure of success for agriculture in the regular public secondary schools of Minnesota.

Without such men such success could not have come. Without such legislative and administrative conditions such men could not have been obtained. To insure a supply of such men the University of Minnesota has established in its college of agriculture a division of agricultural education, which maintains, in addition to the eight specialized courses maintained by the other divisions of the college, a four-year course for special preparation in the teaching of agriculture. All the four-year courses require the completion of 144 semester hours of work. The course in agricultural education includes the fundamental and essential subjects found in the other courses to the extent of 129 semester hours and 15 hours of special professional preparation for teaching. These include principles of education, 3 hours; methods of teaching with special reference to agriculture, 3 hours; the organization and administration of agricultural work in a Minnesota high school, 3 hours; practice teaching under expert critic teachers, 3 hours; and 3 hours selected from industrial education, 3 hours; general psychology, 3 hours; and history of education, 3 hours. Specific instruction is given regarding courses of study, programs, textbooks, methods in the class room, the laboratory, the school plot, extension work, conduct of short courses, equipment, and other practical subjects fitted to prepare the man to enter upon his task familiar with the soundest principles, processes, and practices of that particular type of work.

States or communities that hope to give an agricultural education to their secondary students by having a little academic agriculture taught from a general text by an academically prepared teacher may be moving in the right direction, but they are moving very slowly and are still very, very far from even a sight of the promised land. Only with a teacher properly prepared in practical and scientific agriculture and with sound professional training, working under proper conditions, can such an education be given. Minnesota has been willing to pay the price of preparing such men through her college of agriculture and of creating such conditions in her public secondary schools, and she is daily increasing her confidence in the thesis that on such a basis secondary agricultural education for the masses will succeed.

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AGRICULTURAL EDUCATION IN COUNTY SCHOOLS.

By H. L. RUSSELL,

Dean, College of Agriculture, University of Wisconsin.

The very rapid development of agricultural education in recent years has led to the proposal of a number of different methods of approach. In education as in any other field of human inquiry, experiments must of necessity be tried, and consequently, it is to be expected that of the different devices which are suggested for the accomplishment of specific results some will fail, while others succeed. It is unnecessary here to consume any time to discuss the need and value of agriculture in educational work.

The two primary methods by which efforts have been made to put agricultural education on a substantial basis in secondary schools have been through the development of segregated or special schools of agriculture, and the introduction of agricultural instruction into the curriculum of the already organized public schools.

It is my purpose here to confine the discussion mainly to the efforts which have been made with reference to the first mode of approach. Historically, efforts toward secondary agricultural instruction were developed more particularly in connection with the special school than in an effort to adjust the subject of agriculture to the public school curriculum of existing institutions. In the last 15 years the special school has been tried out under widely different conditions in both the North and the South. Considerable difference has developed in the size of the unit which has been regarded as the proper foundation on which such schools should be established. In such States as Georgia and Alabama, the unit has been on the basis of a congressional district, embracing a considerable number of counties; in Oklahoma, a judicial district. In Arkansas and Minnesota, the location has been made on a less definite political subdivision, but nevertheless each school has drawn students from a number of counties, while in Wisconsin and Michigan efforts have been made to establish these schools of practical agriculture upon the basis of county boundaries. It was assumed that the county was a large enough unit to furnish adequate attendance, and that it was more feasible for this integral political subdivision to levy the necessary tax to found the school and maintain the same.

The work in Wisconsin was based primarily upon the recommendation of Dr. L. D. Harvey, then superintendent of public instruction, whose recommendations made to the legislature of 1901 resulted in the establishment of the special school for agriculture and domestic economy. These schools were founded primarily as trade schools in agriculture and home making, with the idea that opportunity would be offered to take the boy or girl from the farm and give them practical instruction in agriculture and home economics, together with certain fundamental branches, such as English and arithmetic. In attempting to practicalize this instruction, it was of

course necessary to have land adjacent to the school on which the demonstrative trial work could be carried out. The problem of caring for flocks and herds was still more difficult, but in some of the stronger schools a good nucleus of live stock was also secured. Considerable enthusiasm was at first manifested with reference to the development of these schools. The buildings and equipments were furnished by the counties, while the maintenance of the institution was shared by both county and State. This made them essentially State-supported schools, but the larger portion of the burden of the institution, as that involved in the construction of the building, fell upon the county. The course of study connected with these schools consists of two years of eight months each. Taking the students from the common or grade schools and giving them instruction only for a period of two years made it impossible for the graduates of these schools to proceed further with reference to their education, unless they returned to the regular public-school system and finished the course of study in the free high schools. This fact made these schools more or less of an educational cul-de-sac and made it difficult, even impossible, for the student to use them as a means of preparing himself for still further educational work. This was not the original intention of the schools. They were primarily designed, as indicated above, to be trade schools in agriculture and their function was assumed to prepare boys and girls to carry on more intelligently farm and home operations.

This system has now been in operation for over a decade, and it is therefore possible to study the results that have been obtained during this time to see whether they are sufficient to warrant their encouragement.

There are now eight of these schools that have been organized in different counties in Wisconsin and three in Michigan. Starting with Dunn County in 1902, growth in numbers has been somewhat slow, although since 1912 three of the total number have been installed.

So far as matter of attendance has gone, these schools have not shown an especially marked growth. Naturally the number in attendance fluctuates materially in the different schools, but the attendance for the last year or so has not been in most cases what it was during the earlier years of the school. As between attendance of boys and girls no general principle obtains. The enrollment of boys has been somewhat larger than girls, but it is noteworthy that there is a much greater degree of regularity in attendance among the girls than the boys.

Experience has demonstrated that the peak load with reference to boys occurs during the winter months from December to March, and that the number in attendance during the other months of the academic period frequently is not more than one-half of the number present during the winter months. This shows without question that so far as the young men are concerned, a system of instruction which could be given in the winter months after the heavy work of the farm is completed in the fall is better adapted to meet the needs of this class than that given during the full period.

It is necessary from a practical point of view to study the total cost of these schools. Although the average attendance has not increased during the last few years, the total cost of operation has in practically all cases materially increased, as well as the amount of State support. At the present time the State pays all of the support of these schools up to \$6,000 or \$7,000 per year, such aid being based on the school enrollment.

The per capita cost of these schools has been surprisingly high. The total yearly cost has ranged in the smaller schools from six to eight thousand dollars to a cost of fourteen to fifteen thousand dollars in the larger schools, and in the case of Milwaukee County, to a very much larger expenditure. If the per capita cost is assumed to be the total cost of maintenance divided by the daily total enrollment, it is found that the annual cost per pupil traverses a very wide range, but is several hundred dollars per individual. In the majority of cases this amount exceeds three or four hundred dollars per pupil, and the cost of instruction is so much greater than that which occurs

in any other part of the secondary school system that the question may well be raised as to whether or not such large expenditures are justifiable. In fact, in the majority of cases at the present time the per capita cost of instruction exceeds that which obtains in most of the higher institutions of learning.

Unless the number of students can be materially increased over and above that which now exists, it does not appear practicable to reduce the per capita cost in any material degree. It should be understood however that these schools are doing a good deal of community work in their respective sections of a general agricultural extension character, which is not wholly chargeable to the cost of instruction, but as this expenditure is used as a basis on which to secure State aid, it is therefore fair that it should be included in the determination of the per capita cost of instruction.

During the interim since the foundation of these schools, there has been a marked development in the direction of introducing agriculture into the regular public school system of the State where the subject is placed upon a par with other vocational studies, as well as those usually embraced in the regular curriculum of the ordinary high school. In a number of States this movement has been facilitated by legal enactment and the teaching of agriculture has been made compulsory, but even in those States where no compulsory requirement has obtained, a very rapid voluntary advance in the introduction of agriculture has occurred. In such instances, the teacher of agriculture not infrequently is hired on a 12 months' basis instead of the customary 9 months' school year. This enables the instructor to work with his students on home project work during the summer vacation, thereby securing substantially all of the advantages which otherwise come from the closer correlation of the school work with the practical life in the home and on the farm.

Thus far this movement of introducing agriculture into the high school has not been in operation for a sufficient period of time in Wisconsin to enable definite conclusions to be drawn as to whether or not the character of the work performed in these courses in the high schools is as thorough as is possible in the segregated school, where more emphasis and time can be given to this subject. However, the extension of the period of service of the agricultural instructor to cover the whole year bids fair to lay a foundation which ought to result in as thorough work being done in the one case as the other.

Within the past two years another experiment has been made with reference to the special county schools. Realizing that it was difficult for them to compete with the agricultural courses in the high school system, as many of the students desire to go farther educationally than the vocational trade school carries them, several of the county schools have tried the experiment of extending their course of study from two to four years and introducing general studies. This makes them quite highly specialized agricultural high schools, and upon inspection by the university their graduates are admitted to the university without examination the same as from the approved high schools of the State. This modification in their course of study naturally removes the main objection which has heretofore been urged against them, viz, that they were a side branch of the educational system of the State which led nowhere. Organizing them on a 4-year basis puts them in the category of the high school system and gives them all of the advantages which accrue to the main educational system of the State.

However, such action plainly indicates that they have failed in the primary purpose for which they were founded, viz., agricultural trade schools which would take the boy from the farm and train him to go back directly to the farm without any further educational effort. This new system has only been tried out for two years and consequently it is not safe to draw conclusions as to whether it is a meritorious step or not.

The attendance this year in those schools where the experiment was tried is larger than before so it is to be hoped that this experiment will prove successful.

It must, however, be noted in this connection that this makes for an anomalous condition, in that it establishes sometimes in the same town two high schools, one

supported at local expense while the agricultural school is largely supported at State expense. It may well be questioned whether a State subsidized school should be permitted to compete in the same locality with the regular public school system.

COUNTY SHORT COURSES IN AGRICULTURE.

In the development of secondary agricultural instruction the university has also assisted to a very material degree. For many years there has been maintained at the university what is known as a short course in agriculture, which consists of a course of study during two winters for a period of 14 weeks each. This course was started in 1885 and at that time was the first effort which had then been made to develop a purely practical course of agricultural instruction in a college or university on a submatriculate basis. The regular academic courses of instruction which were then given in the university had not succeeded in reaching any large number of students, and an effort was made in this short winter course to secure the attendance of the farm boy for a period when he could best be spared from practical farm work. Starting in a very modest way, this course has grown gradually until at the present time there are at the university each winter between five and six hundred students who are taking practical work in agricultural lines. The success of this work has been very marked. Of the 4,000 students who have attended these courses of instruction, 90 per cent are engaged in different phases of agriculture and over 80 per cent are on Wisconsin farms.

Three years ago efforts were made to extend the influence of this type of instruction through the development of what are known as county short courses in agriculture. This has been made possible by the fact that in a number of counties in the State the university has established county agricultural representatives who are permanent residents of their respective counties. These men are engaged primarily for extension work in accordance with the terms of the Smith-Lever Act of Congress, but during the winter months when crop-growing operations are at a standstill and the extension activities are concentrated mainly upon live-stock problems, it has been possible for them to hold, in conjunction with the county schools for the training of rural teachers, courses of study for young people along agricultural lines. Not only do these respective agricultural representatives give the instruction in agriculture to the county training-school students, thereby directly influencing the character of the instruction which will later be given in the rural schools of that county, but simultaneously with this work they hold a county short course in agriculture for boys for a period of seven or eight weeks. This is designed to bring in young men in the county who have either finished or left the rural school and have decided to go no further with their education because of one reason or another. Through the medium of this vocational course along practical lines, no inconsiderable number of boys have been induced to resume their school work and become interested again in educational matters. This instruction is given with practically no additional cost either to the county or the community, as it is regarded as germane to his extension work. Credit for the work so taken is given in the short course at the university and the boy who has completed the two winters' work in the county short course is able to finish the short course at the university in one instead of two winters.

This movement has not yet been in operation long enough to indicate whether it will permanently affect the agricultural educational situation in the county. It is practically a continuation school in agriculture, the cost of which is so small as to be negligible.

In a somewhat similar way brief winter courses in agriculture have also been introduced into the high-school work. This has been done to meet the condition which obtains—that a considerable fraction of boys, to whom such work as this would appeal, are unable to attend school during the entire school year. They would, however, be willing and anxious to take advantage of a course of practical work which

could be given during the winter months when farm operations are at a minimum. At the present time this educational experiment has only been in operation for a couple of years and it is too early yet to say how successful this effort will prove, but from the experience gained in Wisconsin in developing secondary agricultural instruction it seems more than likely that agriculture will become more firmly established in the regular school system of the State. The quality of teaching is steadily improving and with the development of the twelve months' relation of the teacher to the work of the students on their home farms, the value of the agricultural work is much more appreciated. This movement has done more to tie the school work to the practical affairs of life than any other feature. It has dignified and ennobled labor and makes the scholar feel that education is after all a preparation for life which he can not afford to neglect.

If in this connection provision can also be made for brief winter courses for those who are unable to attend school the entire year, it appears that the local school can serve its community in this respect in a most advantageous way.

THE AMERICAN COLLEGE OF AGRICULTURE.

By F. B. MUMFORD,

Dean, College of Agriculture, University of Missouri.

The Federal legislation establishing agricultural colleges in the several States was the result of a conviction on the part of the Nation that existing educational institutions were not offering a kind of education which prepared men adequately for the vocation of agriculture. It was recognized that agriculture was not only the greatest natural resource from the standpoint of economic importance, but that it was the sole occupation of 65 per cent of the citizens of the United States. It was fully recognized that the cultivators of the soil represented the conservative element in our democracy and special training for the purpose of increasing the farmer's efficiency must also result in raising the general level of intelligence of the rural people and thus indirectly increase the efficiency of the rural class as citizens.

The older colleges of agriculture have now been in active operation for a half century. Their progress in material equipment, enrollment of students, and general popularity has been little short of marvelous. These institutions have not only taught the sciences underlying the practice of agriculture, but they have virtually created a new applied science—the science of agriculture.

In the beginning these institutions were chiefly scientific schools teaching sciences in the conventional way often with little reference to their application. In institutions where it was earnestly desired to emphasize the applications it was soon realized that there was no sufficient body of knowledge available to serve as a basis for such practical educational purposes. Out of this need came the demand for agricultural experiment stations, and Congress, through the Hatch and Adams Acts, endowed these institutions with Federal funds for original research in the sciences relating to agriculture. This stage in the development of the American college of agriculture was the beginning of rapid development and improvement in enrollment of students, increase in equipment, and influence on the industry of agriculture. In fact, it must be said that it was the efficient work of the experiment stations that demonstrated to all classes the intrinsic and fundamental value of the agricultural colleges not only to the agricultural industry, but to the Nation. As a natural result of the valuable discoveries of the experiment stations came the demand to demonstrate their practical value to farmers now on the land. Out of this demand came the present great movement for agricultural extension, resulting in the passage of the Smith-Lever Act by Congress,

which provides definitely and generously for nonresident instruction in agriculture and home economics. The present organization of the American college of agriculture then represents these three coordinate functions, resident college teaching, investigation and nonresident teaching or extension.

The limits of this paper do not permit of a discussion of each of these functions or their important intimate and necessary interrelations. It is my purpose therefore to discuss in a brief way some phases of the work of the American college of agriculture pertaining to the proper function and purpose of the college course.

What should be the purpose of the four-year college course in agriculture? Should the chief purpose of the college be to train men to achieve success in agriculture as a vocation, or should the college of agriculture so organize its work as to provide chiefly for the training of teachers of agriculture, investigators and experts of various kinds? It must be admitted that to a certain extent the leading colleges have accomplished both purposes. But at the same time it is recognized that in some institutions the emphasis has been more largely placed on the training of men for professional work in other colleges, in the United States Department of Agriculture, and for other positions requiring a technical knowledge such as can be given in a well-equipped institution. The latter class of institutions have in some instances maintained that under existing conditions the prospective farmer was not justified in spending four years of study beyond the high school in preparing himself for the stern realities of the farmer's life. This point of view has had a material influence upon the educational policies of some institutions and has resulted in giving a definite direction to the selection of requirements for a degree in agriculture. In organizing the instructional work of the colleges of agriculture who have held to this opinion a distinction has been made between students who have enrolled for the purpose of preparing themselves for agriculture as a vocation and those who are preparing for professional work as teachers, investigators, or technical experts in various lines related to agriculture. Special courses have been offered for training farmers which have been lower in grade than the college course and require less time for completion. The four-year college course has been to a greater or less extent outlined with the definite purpose of training men for technical work.

Another much larger group of institutions has held firmly to the belief that Senator Morrill was right in his insistence upon the principles that a college of agriculture and mechanic arts should be administered with the definite and distinct purpose of providing an education for the industrial classes. It must be admitted, however, that there is nothing in the Morrill bill to prevent the organization of a technical college of agriculture, whose chief purpose is the training of professional agriculturists. These institutions have kept clearly in mind the historical events which led to the establishment of such institutions, the great need of the agricultural population for a training to increase their efficiency, and the fundamental importance of the conservation of the soil, our greatest national resource, by thoroughly training the owners and cultivators of our lands. Institutions of this class have not found it necessary to neglect the training of teachers and investigators, but have generally held that the undergraduate course should be regarded primarily as a course of instruction for land owners and operators.

In the light of these diverse views regarding the real function of the American colleges of agriculture, what should be the attitude of the administrative officers who determine the educational policies of such institutions? What should be the chief or primary purpose of the four-year undergraduate course in agriculture?

In attempting to answer this question, we can not safely disregard the plain teachings of a half century of experience in the development and progress of agricultural colleges. It must be admitted that a very large number of the graduates of agricultural colleges have been appointed to positions as teachers, investigators, and as technical experts in related lines. The rapid development of the Federal Department of Agriculture, agricultural colleges, experiment stations, and agricultural extension

agencies has created an unusual demand for workers in agricultural science. This condition, however, must be regarded as temporary and to a certain extent abnormal. Agricultural institutions can not expand indefinitely. The time is not far distant when these institutions will have a settled income and will have reached a stage of development when further rapid expansion will be unlikely. In the meantime the fundamental need of the industrial classes for technical training has not lessened. The problems of the twentieth century farmer are far more difficult than were the problems of the farmers at the time of the passage of the Morrill bill. If the fundamental need which colleges of agriculture were founded to meet was the technical training of the industrial classes that need is far greater in 1915 than it was in 1862.

After all, the real function of the undergraduate course in agriculture is and should be to train men efficiently for agriculture as a vocation. The function of a school of engineering is primarily to train great engineers not teachers of engineering. The fundamental purpose of a law school or a medical school is to train great lawyers and physicians not teachers of law and medicine. Likewise, the undergraduate course in agriculture should train men to achieve in the vocation of agriculture.

It is an open question whether such a course of study is not the best foundation for teachers and investigators. But we have reached a time when efficient teachers and investigators can no longer be adequately trained by the undergraduate curriculum. Admittedly, every teacher and investigator of the present day should have an educational equipment equivalent to the doctor's degree and certainly not less than the master's degree. The training of teachers, investigators, and technical experts must be accomplished by graduate departments. Greater emphasis must be placed upon intellectual preparedness by administrative officers and far more encouragement given to original research among advanced students in the graduate departments of colleges of agriculture. It is possible to bring about practical cooperation between the experiment station and the graduate department of the agricultural college, which will result in mutual advantage to the station to the graduate department and the student.

Such a plan has been perfected in the University of Missouri, which has given satisfactory results. The experiment station offers scholarships paying \$200 and fellowships paying \$400 a year each to graduate students who have shown unusual capacity for original research. These students are required to select their major work in connection with some definite experiment station project which can be completed in one school year. The results of this investigation are used as the basis of a thesis which, together with a final examination, constitute the requirements for a master's degree. This plan has resulted in stimulating graduate study, emphasizing the importance of advanced study for training teachers and investigators, and the gradual improvement of facilities for giving graduate instruction in agriculture in this institution.

In conclusion, it is the opinion of the writer that the undergraduate course should be definitely shaped for the needs of the man who is to live on the land; that the teachers and investigators in agriculture should receive their specialized training in the graduate department, and for this purpose the graduate instruction should be adapted primarily to their needs.

AGRICULTURAL EDUCATION.

By E. DAVENPORT,

Dean, College of Agriculture, University of Illinois.

In a paper upon industrial education read before another section of this congress the general principle was advanced that in a system of publicly supported schools for a self-governing people one of the two great purposes of education is to serve the people through their vocations; indeed, that the original and fundamental impulse toward education was, is now, and always will be, vocational. It was equally maintained that the other purpose was as distinctly non-vocational and designed to produce an intelligent, cultivated, and public-spirited citizenry. The subject of agricultural education is, I take it, one phase only of a general system of vocational education, and its materials and methods must be technical. In order to be effective, the objects must be clearly in mind, and it is this phase of the subject that I have undertaken to treat rather than the methods or the details of procedure.

In many respects agriculture is our most important industry when considered from the public point of view. In a finished state of society it absorbs the lives and the activities of a full third of all the people. They live largely apart from others, constituting a kind of class. They are not competitors one against another as in other forms of business. They are largely independent and self-directed people, inclined to settle matters upon their merits. The public is entirely dependent upon them for very existence day by day. They occupy and operate most of the territory on which national existence is dependent. They own and manage for good or ill the land which in the last analysis belongs to humanity and to the ages. Truly the farmers are an important folk and agriculture is a master profession.

Considered from any adequate point of view, the education of these people for their business and for citizenship is no mean matter. Moreover, if mistakes are made and things go wrong, the public and not the farmer pays the chief penalty, for in a languishing or an inadequate agriculture the farmer is the last and the least to suffer.

I have chosen this somewhat labored introduction to show why it is that whatever indirect and accessory activities may be involved, the two great objects in agricultural education are: First, to train for farming; and second, to fit for country life; and we are not to be swerved from this singleness of purpose by the allurements of high standards of scholarship, by the fascinations of out-door art, by the enticements of social and economic welfare, by the intricacies of research, nor by the machinery we adopt to secure results. All these are important. All these are involved, but as in all other matters, here particularly, we are not to become so enamored of that which is prominent and close at hand as ever to mistake the means for the end. Nor must we lose the vision of a better agriculture and a fuller life in the open country, where so many people live, where voting is not for expediency, and where some of the most difficult problems of human welfare will find their first solution—a solution, by the way, that must be worked out mainly by the people themselves.

THE IMPROVEMENT OF FARMING.

The improvement of farming as a definite object in agricultural education is reducible to a few distinct conceptions: First, to make farming more productive; second, to make it more profitable; third, to make it more reliable; fourth, to make it more permanent; fifth, to preserve a meat diet; and sixth, to improve the quality of our food products.

To make farming more productive.—There is no need actually to produce two blades of grass where but one grew before until the time comes when the second blade is needed. Long before that, however, the methods of doubling yield should be worked out against the day of need.

In actual practice at any given time not enough farmers are likely to adopt the better methods to more than offset the effects of reduced yields on depleted lands and

the enlarged demand from increasing population. For all practical purposes, therefore, we may proceed with plans definitely contemplating the increase of yields by rational methods, though thinking men will deplore a general attention to prize yields, and all extravagant statements as to what should be expected of progressive farmers.

It is easy to make it appear that population is certain soon to overtake production and that a day of scarcity is just ahead. However, many causes are operative to prevent overpopulation, chief among which, in this country, is the law of compulsory attendance at school. This law, taking the child off the farm and out of the factory into the school, converts him from an asset into a liability, from an earner into a spender, and this fact alone will limit the size of families; indeed, it has done so already. The standard of living is as effective for controlling the increase of population as any law of Malthus, provided it is enforced, and the school law is in a fair way to be enforced upon all classes of people in this country. Nevertheless, our agriculture should be increasingly productive for a considerable time to come in order to meet the demands of inevitable increase.

To make farming more profitable.—The demand everywhere is for higher standards of living and more comforts for the country people. If that is to be realized, then agriculture must be more profitable, for it costs more to be comfortable than merely to exist. The American farmer up to the opening of the twentieth century worked his farm for day wages and threw in his fertility; that is to say, it is doubtful if all the profits of farming up to date would more than pay for the fertility that has been mined out of the soil and hauled to town in crops.

To make farming more reliable.—The loss of animals and crops by diseases, by insect or fungous ravages, or by weather, is not likely to be in these days a particularly serious matter to the public at large, but it is often disastrous to individual families. To remove or at least to reduce the hazard of farming is a duty the public owes the individual and ultimately itself, and it will remain one of the chief objects of agricultural education.

To make agriculture more permanent.—The tendency everywhere in farming is to the depletion of fertility and the lessening of yield, in face of the fact that as time goes on the demands for food will be greater and not less. In other words, the business of farming tends strongly to its own destruction, and even though better methods and better seed tend to increase of yield, the effect up to date is hardly enough to compensate for loss of fertility. That is why, as a whole, the total effect upon yield of our Federal systems of agricultural education, really operative for only a dozen or fifteen years, has hardly more than stopped the downward tendency resulting from old-time ruinous farming. To establish and to maintain a kind of farming that may go on forever and that will pay as it goes—this is a major aim of agricultural education.

To preserve a meat diet.—As animal food is six to ten times as expensive as vegetable food, the problem of insuring a meat supply to all the people is one that no race has solved successfully. And yet until it is settled no democracy is upon a stable foundation. The question is not simply one of a full dinner pail for the laborer, it is one of meat—indeed, of the same meat that finds its way to the table of the employer; for the laboring man, like all others, likes animal food, and in one way or another, directly or indirectly, he will demand it of the situation.

To improve the quality of our food products.—I see no hope for cheap food on the earth; indeed, food has been too cheap as compared with other necessities and with luxuries. In America we have taken food for granted as a free gift of nature like the sunshine and the rain. The people pretty generally have been able to spend, often to squander, most of their substance upon the accessories of life, but it has been at the expense of fertility, and the next generation will pay the bills, not only for their own necessities but for our extravagances.

I do not reckon cheap food, therefore, as either possible or desirable, but I do believe that if the proper methods be used in establishing an agriculture that is productive and permanent, the supply of food will be both adequate and reasonable as to cost.

But much is yet to be desired as to quality. To one who remembers back to the middle of last century the improvement in varieties is in most cases enormous. Corn, potatoes, wheat, tomatoes, lettuce, cabbage, strawberries, blackberries, grapes, asparagus, cantaloupes, watermelons, oranges, grapefruits, indeed almost all fruits and vegetables except perhaps the apple and the pear, the cherry and the Hubbard squash, have been practically reconstructed by the genius of the breeder.

And the end is not yet. We feel the right to demand still more tender and toothsome vegetables, a more uniform quality in cantaloupes, less bitterness in peaches, and indeed that all objectionable qualities be taken out of our food materials by better breeding, better culture, and better handling.

IMPROVEMENT OF THE FARMER.

With these objects definitely before us the professional side of the problem of agricultural education is fairly well developed. There still remains to provide for the farmer as a man and a citizen.

More comfort for the farmer and his family.—To build modern homes in the country and equip them with suitable conveniences, rather than to strip the land to build up the city with a useless leisure class of retired farmers—this is a difficult problem that only agricultural education can solve. Retirement from the farm is undesirable from two points of view: First, the farmer moves to the city, but he spends most of his time upon the road between the town where he lives and the farm where his mind and interests remain; and second, his children grow up into young people that belong neither to the country nor to the town.

The country beautiful.—The country is to be used and developed, not exploited. Reasonable attention to beauty where there is so little to offend will make the open country a vast landscape beautiful, a prospect altogether lovely. Most men and all women love shrubbery and flowers and good lines in buildings. All men take naturally to grass and trees, and who does not like a cool veranda of a summer evening after a hard day's work? To love the land and to use the things of the country in such a way as to develop the beautiful—this is no less a direct object in agricultural education than it is to know the methods of increasing the corn crop against a day of need.

Educational ideals.—Whether considered from the standpoint of the farmer and his family or from that of the public, the country man should be educated, educated not only as a business man and a producer, but educated broadly in matters outside his own personal interests. He of all men is a citizen of the world, and it will pay to educate him broadly. He can be a very reliable citizen in time of need if properly trained, but if so he must not be regarded as a peasant nor must his education be limited to his business needs. I have frequently said that I would have Americans so educated that all men could mix together comfortably and no man be able to tell by dress, language, or manner which of a company are farmers and which are lawyers or business men. This is the American ideal and it is to be attained in proportion as we combine the professional and the nonprofessional in education.

Religion.—Every man whose lot is cast in the country with God's creatures, who works with nature day by day, should be deeply religious, not in a narrow sense, but with a broad and comprehensive understanding of the philosophy of life. This man should go about his daily work with a vast contentment that can be likened only to the satisfaction of being a conscious part of an Infinite Plan.

All the world is talking about the federation of religion. No people need such a rational system so much as the farmers, who from the natural conditions can not support a variety of brands of religion any more than they can of education. From the country, therefore, we may confidently expect important contributions to the progress of religious unity.

The school.—As with all other forms of education that in agriculture began in the college and is gradually working downward to the primary grades. In 1862 the begin

ning was made of a national system of agricultural colleges, and there is now one in every State which is also liberally supported by local funds.

The success of these colleges was not immediate; indeed, after thirty years their future was still problematical. In the nineties matters began to mend and their unprecedented success dates from the opening of the present century, one such college giving instruction of various kinds to practically three thousand students during the current year and others with approximately a thousand bona fide four-year men, all graduates of high schools.

Not only has the college succeeded, but almost immediately agriculture made its way into the public high school, practically upon the plan advocated in the address on Industrial Education, that is, as an integral but elective part of the curriculum. Its best success in the grades and even in the country schools waits upon its more perfect development in the high and normal schools, but it is a significant fact that so far as is known to the writer no school having introduced agriculture has ever afterward discarded the subject.

There is no time to discuss the details of instruction, in which the present company, I take it, are less interested than in the general facts of the subject. It is perhaps enough to add that the rapid development of agricultural education and research, together with the general interest in farming and in land have given rise to several new professions, namely, the teacher, the investigator, the farm manager, the extension worker, and the county adviser or local demonstrator, not to mention the professional lecturer and writer.

Neither the attractions of these new professions, which are many, nor their qualifications, which are exacting, should divert attention from the original and principal object, which is improved farming and a better country life,—a purpose that is fundamental wherever agricultural education is administered whether in college or in secondary school.

AGRICULTURAL EXTENSION WORK.

By G. I. CHRISTIE,

Superintendent, Department of Agricultural Extension, Purdue University.

Agricultural extension work as now organized in the several States is the outgrowth of an insistent and urgent demand of the agricultural people for active and direct assistance in solving problems of the farm and home. Since the early days of agriculture in the United States farmers have experienced troubles and losses because of a lack of information and assistance. History records that our forefathers on the Eastern coast cleared the land of heavy timber, stirred the rich virgin soil, sowed the seed, and harvested bountiful crops. Soon, however, these farmers found that the soil grew less productive, insects attacked the crops, and diseases came among the animals. Their problems were similar to those of the present time.

President George Washington, who was a farmer, conducted many experiments and demonstrations and realized as a result of his farm activities and travels over the Eastern and Southern States that farmers were not employing rational or profitable methods in the handling of the soil, crops, and live stock. In his last message to Congress, President Washington urged that a Department of Agriculture be established to hold fairs, and in other ways encourage a better agriculture. Opposition was encountered and almost a century passed before the Federal Government made any provision for agricultural work.

Further evidence of the demand of the agricultural people for assistance was the passage of the land-grant act by Congress in 1862, which provided for a college of agriculture and mechanic arts in every State and Territory. It was hoped that

through the education of the young people of the farm in the arts and science of agriculture that many difficulties would be removed and agriculture made more satisfying and profitable. For the reason that little agricultural information was in a teachable form and that farmers in those earlier years were not willing to send their sons to an agricultural college, little progress was made through this medium.

A few years later it was found that the people were confronted with still more complicated agricultural problems, and yet there was but little available information or assistance. In 1887 Congress passed an act providing for an agricultural experiment station in each State and Territory and making for each station an annual appropriation of \$15,000.

These institutions were promptly established and an army of trained workers undertook the task of solving some of the problems relating to soil fertility, the production of crops and live stock, plant and animal diseases, etc. A large amount of valuable and helpful information has been assembled and published in bulletins, the Agricultural Press and other publications. To further advance the Experiment Station work, an act of Congress approved in 1907, provides for an annual appropriation of \$15,000 to each State and Territory. The several States have also made generous appropriations which place the stations in a position to deal with the agricultural problems in a large and effective way.

The universal agitation for an improved American agriculture is influenced by another large and most important factor. The large and rapidly increasing population makes an unprecedented demand upon the farmers for food stuffs. A study of statistics shows that the population of the United States has practically doubled every 25 years. The present annual increase in the population reaches almost 2,000,000. One of our statesmen who has given much thought to the subject, predicts that our population will reach 150,000,000 by the year 1950. The problem of furnishing an adequate food supply from the farms of the United States to meet this great demand is now before the people in a prominent way.

Prices are indicative of supply and demand. The present high cost of living would indicate that the production of food stuffs is not keeping pace with consumption. A few years ago new States and Territories were being occupied and an increased supply of farm products placed upon the markets. This acquiring and developing of new lands did much to keep production ahead of consumption and meet the needs of an increasing population. To-day there is but little new agricultural territory to be developed. The increase in farm products for the future must come, in a large measure, from land already under cultivation.

A study of some of the actual agricultural conditions and the opportunity for improvement will be of interest. The average yield of wheat in the United States for the past 10 years was 14.8 bushels per acre. A few years ago the yield of wheat in England and Germany was really lower than that now found in the United States. Through fertilization and a better crop system these countries have been able to gradually increase the average yield of the wheat crop until at this time it ranges about 36 bushels per acre. On the farm of Purdue University, where conditions are similar to those of a large area of the wheat lands, through a good rotation of crops and proper fertilization the average yield of wheat for the past 30 years has reached 28 bushels per acre. These, with many other examples, clearly demonstrate that it is possible to materially increase the yield of wheat throughout the country.

In States of the Central West, corn is king of crops, and yet the average yield per acre for the past 10 years was only 31.5 bushels. Good lands in all of these States have yielded 60, 70, and 80 bushels per acre. To lower the average yield of corn to 31.5 bushels, thousands of farms have yielded far less than 30 bushels per acre, which makes the crop most unprofitable. To bring before corn growers the fact that the yield of corn can be materially and profitably increased, demonstration work was started in Indiana, where conditions are similar to those of the corn belt.

Two hundred and thirty-eight farmers each grew 5 acres of corn with a view of demonstrating the amount of corn which could be produced. Notwithstanding the drought and other unfavorable conditions, 21 of these farmers were able to grow more than 100 bushels of corn per acre. This yield was far above the average of the crop on the several farms on which the plots were grown and more than double the average yield of the counties in which the crops were produced. The average of the 238 contestants was 72.4 bushels per acre or just about twice the average of the State. When it is remembered that the United States grows annually nearly 106,000,000 acres of corn it is readily appreciated that an increase of 5 to 20 bushels per acre means much to the increased wealth of the country.

Another most important factor in this demonstration was the item of cost of production. The average yield of corn per acre for the past 10 years in Indiana was 36.4 bushels. The cost of producing an acre of corn is about \$13.49. This places the cost of producing a bushel of corn at 37.1 cents. One of the highest yields in the contest, 110.9 bushels per acre, was produced at a total cost of \$19.16 per acre or 17.1 cents per bushel. The average cost of the 238 plots was \$13.52 per acre or 18.6 cents per bushel. It is clearly seen that the high yield is not only profitable because of the larger total value, but because there is a greater net profit on each bushel produced. What has been done by these people in the way of increasing the yields and decreasing the cost of production can be done by many other farmers.

In the production of beef, the experiment station of Purdue University has shown that when a carload of cattle was fed on a ration similar to that used by a large number of cattle feeders, 13 pounds of corn were required to produce a pound of beef. When the ration was modified so as to contain a more nearly correct proportion of proteins and carbohydrates and fed to a second carload of cattle, only 9 pounds of corn were required to produce a pound of beef. It was further shown in this same experiment that the carload of cattle fed on rations similar to those fed by the farmers, gave a profit of only \$1.16 per head, while the carload of cattle fed on a balanced ration gave a profit of something over \$22 per steer. These rations have been tried on a large number of farms of the corn belt in recent years with similar results, proving conclusively that it is possible to so adjust the ration that meat can be produced in a more economical way and with great profit to both producer and consumer.

A large number of experiments show that many soils are unproductive because they lack a sufficient available supply of one or more of the principal elements of plant food. These experiments also show how the lacking elements can be easily and profitably supplied. It is only necessary now that farmers acquaint themselves with this information and make application of same in their farming operations to secure larger and more economical returns from their crops.

Experimental and demonstrational work has been carried on in connection with dairying, fruit growing, truck crops, poultry, and other agricultural products in the several States and under varying conditions until there is sufficient information, which, if universally and rightly applied, will more than double the product of the farms of the United States.

The economic phase of the work of the experiment stations and agricultural colleges means much in placing before the people the business side of farming. To-day large commercial enterprises are springing up in every center and are bidding for strong young men with the result that large numbers of the capable young people are leaving the farm for industrial and professional life. It is, perhaps, not desirable that all people born on the farm should follow agricultural pursuits. It is, however, absolutely necessary, if the farms are to be kept in a state of high productivity and made to produce food stuffs to meet the demands of a large and increasing population, that a fair share of the capable boys and girls shall remain to direct the activities of the farm and the home. The country may offer many advantages in the way of independence and healthful surroundings, yet the dollar is meaning much in deciding

the location and vocation of the young people. It is evident then, under existing conditions, that, if young men and women are to stay in the country, the farm must be made to yield a reasonable net financial return.

While the financial side of farming must receive serious consideration, yet agricultural education must go farther. Money alone will not keep people in the country. Attention must be given to the home, the school, the church, the roads, and other factors which play a part in making country life attractive and satisfying.

An incident illustrating this point was related by the Country Life Commission appointed by President Roosevelt. A meeting held by the commission in one of the States of the Central West was attended by a large number of well-to-do men, well under 50 years of age, who had been farmers and who had made money on the farm but were at that time living in town. In answer to the question, "Why did you leave the farm to live in town?" they replied, "We moved to town to escape bad roads; to have better schools for our children; to have greater church privileges; to enjoy a larger social life." People of the country are entitled to educational and social advantages equal to those of the town. There is an urgent demand for these and if the rural communities are to retain the best people on the land, steps must be taken to build good roads which eliminate distance between the country home, the social center and town; to provide suitable, well-equipped schools taught by high-class, well-trained teachers, and to maintain a country church which will minister to the spiritual and moral needs of the community and at the same time serve as a guiding influence in the social life of the people.

The needs of agriculture and country life are of paramount importance. A large fund of practical and helpful information is available. How best to reach the rural people and secure a more general utilization and application of the best that is known, is the large problem.

For a number of years many States have made appropriations to the agricultural colleges and State boards of agriculture for extension work. The United States Department of Agriculture has also had funds for the projection of agricultural information. Supplementing the funds and efforts of these institutions, a number of individuals, organizations, and corporations have made large financial contributions and in some cases have carried on in a direct way extensive educational work.

The results of the various extension activities have been far reaching. Large numbers of people have been interested and agricultural conditions in many districts have been improved. The seed sown is now yielding fruit. The practices and methods advocated were taken up by the more progressive individuals and communities and have served as a concrete demonstration of the value of the work of the agricultural colleges and the United States Department of Agriculture. This was necessary in order to break down in the minds of so many, a barrier or prejudice against the teachings of the colleges. The change in attitude is shown by the increased demand for assistance which is far beyond present resources.

Realizing the universal demand and the great need for assistance, and with the hope that all agricultural people in all parts of the United States would receive help, the Smith-Lever Act approved May 8, 1914, was passed by Congress. This act makes an annual appropriation of \$10,000 to each State, beginning July 1, 1914. For the year beginning July 1, 1915, an additional appropriation of \$600,000 is made, and for each of seven succeeding years \$500,000 is appropriated, same to be prorated among the various States according to their rural population on the condition that the States provide from sources within the respective States equal sums for extension work.

The character of the work to be carried on is outlined in the act as follows:

Cooperative agricultural extension work shall consist of the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such

persons information on said subjects through field demonstrations, publications, and otherwise; and this work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State agricultural college or colleges receiving the benefits of this act.

Provision is also made in the Smith-Lever Act for cooperation between the United States Department of Agriculture and the State agricultural college. The object is to secure a closer and more complete coordination of the efforts and expenditures of the colleges and the Federal Department of Agriculture and to promote harmonious team work in all related extension activities.

The Smith-Lever Act has focused the attention of the educational interests on the great agricultural problems, and has provided for a large and active organization in every State for agricultural extension work, which has been defined by Dr. True as "a permanent system of practical education for farming people out of school, conducted according to well-matured plans for the benefit of all the people."

At this point it may be of interest to consider a few of the mediums and methods employed in extension work. The giving out of information in an interesting and understandable form is one task. To secure the application of this information in the practical operations is quite a different problem.

FARMERS' INSTITUTES.

The farmers' institute is one of the oldest extension agencies. For years the meetings have been held in the various States, and the doctrine of an improved agriculture has been earnestly and religiously preached to the many thousands in attendance. This work has been fundamental and has laid a foundation for the many lines that are being taken up at this time.

The institute offers not only an opportunity to impart technical information on farming, home making, road building, etc., but it serves as a medium for the strengthening of social relationships.

Farmers' institutes and miscellaneous meetings of like character will continue to be held and made to meet a demand that perhaps no other extension agency can meet.

EDUCATIONAL TRAINS.

By means of educational trains, which have been operated over almost every railroad in the United States, it has been possible to reach in an effective way large numbers of people in a short space of time. This medium has been most valuable in arousing communities and focusing attention upon definite important matters. When sufficient time is allowed at the several stops, exhibits can be shown to good advantage.

SHORT COURSES.

The short courses, lasting one, two, or more weeks, and located at various points in the State, have served as a most valuable medium through which to assist farmers and their families. Instructors in these courses have opportunity to cover a subject in considerable detail and to conduct demonstrations as well as lectures. The instruction is made as practical as possible, the students being given an opportunity to do laboratory work in the way of judging corn, live stock, fruit or potatoes, pruning trees, making spray mixtures, etc. The women have practical demonstrations on phases of home economics and other interesting allied subjects. In all, the short course serves as a school and has proven of great educational value.

EXHIBITS.

In connection with expositions, State fairs, county fairs, community fairs, chautauquas, and other organized public movements, exhibits of experimental and demonstration work have been made with excellent results. Exhibits afford an opportunity to present by means of concrete materials, photographs, charts, etc., the rec-

ommendation and teachings relative to improved practices in a clear, attractive, and forceful way. "Seeing is believing." People wish to be shown. The exhibit serves as proof of actual results secured. It is true that certain lines of work can be better portrayed by means of exhibits than others; also it is found that exhibits are most valuable where they possess special, attractive, and live features. Ordinary exhibits showing simply an array of products or materials, and lacking prominent, live, educational features, do not warrant the expenditure of much effort or money.

COUNTY AGENTS.

One of the most radical, gigantic, and far-reaching steps taken in a universal way throughout the entire country is that providing for the appointment of county agricultural agents or farm advisors. Practically every State has made provision for the appointment of these workers. At the present time more than 1,100 agents are at work.

In the Southern States provision has been made for women agents to work in the homes of the county in a way similar to that followed by the men with the farmers.

The county agents are, in a majority of cases, appointed by the State agricultural college and the United States Department of Agriculture, cooperating with local organizations within the respective counties. The agents serve as representatives of the college and the United States Department of Agriculture and have in all of their work the guidance and assistance of these institutions.

Different plans in different States are followed in financing the county agent work. The usual plan, however, is to meet the expenses through cooperation of the United States Department of Agriculture, the State agricultural college, the county, and some local organization.

For the position of county agricultural agent it is the aim to appoint men who have had a thorough training in an agricultural college, practical farm management experience, and some experience in extension work. In addition, these men should have a strong and pleasing personality, tact, and other qualities which make for leadership. Such men as described are difficult to find. The supply of capable men with the necessary training is small. For this reason the county agent body must grow slowly, for the appointment of men unsuited to the work and unable to meet in a fair way the expectations of the people will work great injury to the whole movement.

The field of the activities of the county agent is broad. In one State they are outlined in a law as follows:

It shall be the duty of the county agent to cooperate with farmers' institutes, farmers' clubs, and other organizations, conduct practical farm demonstrations, boys' and girls' clubs and contest work, and other movements for the advancement of agriculture and country life and to give advice to farmers on practical farm problems, and aid the county superintendent of schools and the teachers in giving practical education in agriculture and domestic science.

County-agent work has been popular because farmers have been able to receive aid directly and quickly and from one acquainted with local conditions. In campaigns for the combating of hog cholera, foot-and-mouth diseases, county agents have been most helpful and have saved for their counties many thousands of dollars. The agents have also aided the people through the introduction of special crops, orchard demonstrations, etc.

In one county in Indiana the past year the county agent noted that the apple crop was unusually large. The local demand was very small. Many orchard owners who had pruned and sprayed according to the directions of the county agent raised the question as to what was to be done with the product. The county agent sought a commission firm, enlisted their cooperation, and finally succeeded in having them locate a branch office in the county with a corps of pickers and a packing outfit. This firm took from the county more than 35,000 bushels of apples, for which was paid approximately \$25,000.

In no previous year was there ever sold more than 6,000 bushels of apples from this county. Again, it is conservatively estimated that 40,000 bushels of apples were fed to hogs or allowed to rot on the ground because they were unfit for market. Surely this county has benefited in a large way from the services of the county agent in this one line of work. It is just this actual accomplishment that is making the county-agent work not only a success but an important part of the great agricultural organization.

It is recognized that the county agent must be able to do more than give out technical information. He must be a leader and organizer in order that the people may be brought together and enlisted in an active way in the various movements, for the solution of the many problems of agriculture and country life will come easiest and surest when the country people themselves realize conditions and reach the point where they will demand and work for better schools, better churches, better roads, and a recognition of the country's greatest business and industry—agriculture.

NATIONAL, STATE, AND LOCAL SUPPORT OF INDUSTRIAL EDUCATION

By DAVID SNEDDEN,

Former Commissioner of Education of Massachusetts.

The question of the financial support of industrial education will be very acutely before the American public during the next decade at least. It is highly essential that as far as practicable this question should be discussed in the light of fundamental principles. As a basis for discussion, therefore, the following propositions are submitted as reflecting the judgment of the writer:

1. Industrial education (by which is here meant specific vocational training for industrial pursuits as distinguished from agricultural, commercial, home-making, and professional pursuits) is certainly bound, in increasing measure, to become a form of public education, including thereunder both publicly supported and publicly controlled and privately conducted schools, for the following reasons: (a) With a few exceptions the industries of the country show less rather than more capacity to take young workers and to give them effective industrial training. (b) As long as the units of any industry are strongly competitive—that is, one manufacturer competing with another—and as long as labor is as mobile as it now is in the United States, large establishments will find it unprofitable seriously to embark upon the matter of industrial training at their own expense. Industries whose units are not in serious competition—e. g., telephone service and some others—may profitably conduct private industrial schools. Also industries the heads of whose component units have learned systematic cooperation may so adjust vocational training that the benefits conferred by any one industry or establishment will affect all others—e. g., possibly the higher-grade printing industries of America. In all other cases it seems impossible to foresee a time when the stress of competition between the component units and the mobility of labor will not render the private undertaking of an extensive school of industrial education a hazardous and expensive experiment for the industry concerned. (c) The obligation of the State to see that every boy and girl gets a fair start in life will, apart from all other considerations, bring about a widespread establishment of specific training agencies for fitting these young people for any and all industrial pursuits.

II. Effective industrial training will necessarily be expensive. No means have yet been devised whereby profitable training toward industrial education can be given for a less cost than from \$100 to \$200 per student year in day schools, and from \$0.25 to \$0.50 per student hour in night schools. The burden of effective vocational edu-

cation must be borne, as far as practicable, by the wider rather than by the more local areas of taxation.

III. The profitable results of industrial training will not in any large measure accrue to the immediate locality giving it. The trained man will carry his productiveness to other regions, and the town or city which has given him his training, perhaps at great expense, will not profit financially. All public schools should make some investment without immediate regard for the financial returns to the communities involved, but in practice limitations will be found both to the capacity and to the disposition of communities to do this. If, therefore, it becomes evident that the actual benefits of industrial education tend to fall outward, the justification for a wide taxing area for support is apparent.

IV. The administration and direction of vocational education will involve the highest talent available. Standards must be worked out with extreme care. Local administrative communities have proven notoriously unequal and incompetent as respects their ability to give high-grade vocational training. If the right standards are to be established and maintained, if exhaustive experimentation as to most effective methods is to be inaugurated, then the larger the area of administration in general, the more effective will be the results.

V. Even a superficial study of the economic and social organization of America must show that no necessary relationship exists between the number of children to be educated in any local community or State and the available resources wherewith to educate them. Property valuations tend to accumulate in large families, and others, in certain sections. If any form of education is to become part of a general policy of social economy and sound administration, then richer communities must assist in bearing the educational burdens of the weaker. The ideal should be, on the one hand, an equitable distribution of the burden of supporting schools and, on the other hand, an equitable distribution of opportunities and facilities for obtaining right education.

VI. It follows from the foregoing that as a general principle, while local communities should be called upon to bear a part of the cost of industrial education as far as practicable, larger areas of taxation should also be drawn upon. At present the limit is found in the State. Massachusetts is an example of a Commonwealth in which the cost of maintaining industrial education is borne to the extent of one-half by the local community and one-half by the State, the State thus being brought into a position of intimate supervision which, while not amounting to control, nevertheless gives substantially all the valuable results that may be expected from immediate control.

VII. The next problem confronting the country is as to whether the Nation as a whole should also contribute to the support of vocational education. It is the writer's contention that the principles of efficient administration, as well as a sound underlying social economy, require that industrial education, because it is expensive, because its results tend ever to spread afar from the place of its origin, and because it is peculiarly in need of scientific direction, should be aided in part from national funds. A convenient formula for this purpose might be to the effect that the local community should contribute one-third, the State one-third, and National Government one-third; that all contributions from State and National Government should be by way of reimbursement of expenditures incurred locally in maintaining types and standards of work approved by the administrative authorities of the larger areas. As regards special matters, such as the training of teachers for industrial schools, the State and Nation might well share equally, and as regards the conduct of experimental research in industrial education the Nation itself might well take the initiative and bear the entire expense, it being remembered that local communities and States must always incur a large outlay for the equipment of vocational education.

VIII. It is sometimes proposed that the State or the Nation should alone manage vocational education. From this position the writer dissents, for the following reasons: Undoubtedly effective industrial education will involve, in its fuller development, the close cooperation of industrial schools with economic productive agencies, to the end that, after an initial period of greater or less length in the all-day vocational school, the student will have entered industry on a part-time basis, and will complete the last stages of his training in evening schools adjusted to the requirements of industrial training. The cooperation here suggested can best be effected through local agencies, the State and National administrative authorities coming in to give confirmation and approval.

IX. If national aid in the United States is to be given to vocational education, it should be an accepted principle that such aid will be administered by competent national authority and will be so administered as to insure high standards of attainment on the part of the vocational schools profiting therefrom. Any other course will simply encourage wastefulness, extravagance, and inefficiency, which are even now so characteristic of much of our industrial and other publicly supported education.

THE PLACE OF INDUSTRIAL EDUCATION IN A SYSTEM OF PUBLIC SCHOOLS OF A SELF-GOVERNING PEOPLE.

By E. DAVENPORT,

Dean, College of Agriculture, University of Illinois.

For convenience and as an aid to brevity, the subject will be discussed from five separate and somewhat diverse points of view, namely, the economic, the political, the social, the educational, and the cultural.

THE ECONOMIC POINT OF VIEW.

Aside from the free gifts of nature, like the sunshine and the rain, the world gets what it earns, no more. There is no cheating in this game except between individuals. What the race is to enjoy must be bought with a price, and that price is human labor. This fact can not be altered by education though every man were a college graduate, nor yet by invention though we turn the tides to work for us. By all tokens known to men the fullness of life, when considered in the large, is conditioned upon effective labor. Even the recluse in his corner would not have his book except somebody chopped trees, sorted rags, made dams, set type, and worked with paste.

The power and the inclination of an individual to produce is increased by his training in and for the profession he follows—indeed the original purpose of education was technical training in theology, medicine, or the law. That nontechnical education is ineffective for vocational purposes we have abundant evidence. A half century and more of universal education of a general character has left us all but destitute of highly skilled workmen except they be foreigners; and already we are burdened by a dead weight of unskilled labor that must be fed, clothed, and sheltered out of the otherwise net proceeds of life.

Yet this mass, far from being uneducated, is part of the product of an educational system that ignored industrial, even occupational, training below the college. Our fathers were apprenticed to a trade, yet we and our children are going to school, learning to spend but not to produce. Hence industrial education as a twentieth-century problem is not a choice but a necessity.

We arrive at the same conclusion by another angle. When education becomes universal and compulsory, then it must serve the needs of everybody. We have no

right to take a child which is to be a citizen out of the industrial life of the people, out of an environment which would automatically, in most cases, make him self-supporting and useful, and put him into a school where he is taught much that he does not need and that is foreign to any life he will ever know, and learns nothing which will help him to get on in the work as the masses must get on by the pursuit of the ordinary industries.

The education which he needs and to which he is entitled is not the remnants of the education that was originally designed for the governing class, but a different thing. The education which he most needs must, like that of the lawyer or the physician, evolve out of the materials and the practices of the occupation he is to follow. He must be technically educated; and educated with the technique of his own, not of another's, profession.

So far have we arrived, and so far will the public generally agree. The great question now is, Shall industrial education have its place in the great system of public schools, or shall a new and separate system be established for the industrial classes?

THE POLITICAL POINT OF VIEW.

If I were discussing a system of industrial education for an absolute monarchy or other form of aristocracy in which the chief purpose is the comfort and exaltation of the exceptional man, I should be compelled to advocate, in order to be logical, a system of separate technical schools, one for each trade or occupation of a given community, and all directly or indirectly under the management of the government.

I should do this because it is assumed, under these conditions, that the many are to labor for the few and that the purpose of education for the masses is objective efficiency as measured by the output; I should do it because a technical school, properly articulated with actual business and ignoring everything but output, is the most powerful agent that can be devised for turning out a skilled human machine; and I should do it for the further reason that such a government is in a position not only to do the thinking for the people, but to put the results of its deliberations into instant and universal execution. In no other way, I am forced to admit, can an equal degree of straight industrial efficiency be secured at any given moment of time.

But our problem is different. We are discussing a system of industrial education for a self-governing people, and before proceeding further let me remind the hearer that in this and all discussions of industrial education one large fact must be kept always in mind, namely, that it requires the full labor of some 90 per cent of all the people to provide the necessities of a highly civilized society. Moreover, this proportion will not be much altered either by education or by invention.

This 90 per cent as a kind of human constant means nothing more nor less than this: The industrial people characterize the race, and whatever system of education is adopted for them will ultimately fix the status of the people as a whole. In the last analysis this is true under any form of government, but it is eminently and immediately true for a self-governing people. Here government is from within, not from without. Here government is not the patron of the people, it is the people. Whatever may be said about "leadership," about "fooling the people," about the "political boss," or about "power of patronage to win votes," the fact remains, whether we like it or not, that in one way or another this 90 per cent will ultimately either rule or ruin.

For the first time in the world's history the common man is beginning to see visions if not to dream dreams. This is the inevitable result of civilization. Its first effect is his determination to enjoy a fair share of the fruits of his own labor, and this he will do even if he is obliged to overturn governments. He will make a lot of mistakes in his blind blundering, but he has started on the road and nothing will swerve him from his purpose. Old-time forms of government may hold him in check; the fetish of sinking his individuality into the supposed personality of the State may cloud his vision and even blind his eyes for a season; and wars that are hatched because society

has become top-heavy here and there may give him a different work to do, for it is his lot to fight other men's quarrels—all this may happen, but at the first opportunity he will resume his purpose and in the end he will achieve it, for dogged determination is one of the chief characteristics of the human animal. In this instance, too, the trait is reinforced by numbers, held together by the common fact that to secure sufficient food, clothing, and shelter occupies the full time and strength of the masses of men.

The term, "a self-governing people" means that government has been assumed by the masses; for history records no instance in which the 10 per cent has handed over the authority willingly. In assuming this duty, however, the masses have added to the labor for their daily bread—the obligation of citizenship, and this fact must be taken into account in drafting educational systems. By this road we arrive at the fact that industrial education, whatever its meaning elsewhere, must mean in a democracy the education of the industrial people, which is quite a different matter from mere training to produce.

Now to be efficient producers these people must be educated industrially; but to be efficient politically they must be educated also for citizenship. Moreover, as their technical training must be gotten through the materials and practices of industry, so must their training as voters be gotten through the materials and science of citizenship. If voters know nothing of the issues of government except as presented in conflicting terms by competing demagogues, their natural recourse is to smash the existing order of things upon the accepted axiom that a change is always good.

These people, then, need two educations; one for successful business whereby they may get gain and live, the other for citizenship whereby they give to the public the best they have of judgment, of sympathy, and of support.

THE SOCIAL POINT OF VIEW.

The principle of self-preservation is one of the most elemental facts in nature. Man possesses it in common with all animals high enough in the scale to be conscious of their own existence. This fact is generally recognized under the term of selfishness, an impulse so blind as to be, if uncontrolled, even vicious in its manifestations. This is the mother of suspicion, envy, jealousy, hatred, and of the whole family of influences that break men apart and set them at each other throats.

Strange as it may seem, the other parent of this family of furies is ignorance of the other man—of his conditions, his necessities, and his point of view. With intimate acquaintance, hatred disappears. The carpenter and the bricklayer, belonging to different, even competing, unions, are good friends if they live in the same neighborhood, if there has been a marriage between the families, or if the unions have stood side by side through a difficult labor struggle. Capital and labor are becoming more tolerant of each other and are beginning to recognize their mutual dependence as they are becoming better acquainted, even by the hard process of strikes and lookouts. How many of the lessons thus hammered out with all their consequences in blood and hunger, might have been learned as children in the schools if we had but established long ago a rational system of vocational education ranging all the way from professional to commercial and industrial training.

The farmer no longer distrusts the business man now that he knows him better. The city and the country are coming together in the same society. The North and South would never have fought if they had known each other in the fifties as they came to know each other in camp in the sixties. The civilized world would not be at war to-day if there were some power strong enough to compel all peoples to stand off and look issues squarely in the face. Indeed about the only good that war has ever done since the primitive days of survival of the fittest is to force strangers or semi-strangers to get acquainted; and no war is more than temporarily effective till this is accomplished, whether we have in mind great racial and national conflicts, labor strikes, or neighborhood quarrels.

Any cleavage in society, from whatever cause or causes, will set the factions over against each other. Anything which sorts the people into classes will raise questions of superiority and inferiority, and ultimately of jealousy and conflict.

Now, in a self-governing people, such a division must be reduced to a minimum if civil war of one kind or another is to be avoided. Wherefore our system of industrial education must not consist of separate schools each educating its people for its own interests and for life in an exclusive class. It may be answered that citizenship may be taught in a technological school as well as anywhere else, but the question is not so much what can be taught as what will be acquired by the pupil. It matters little what abstract instruction in citizenship may be formally taught in the classroom so long as the daily association of the student and his hourly conversations are confined to those of his own class and profession. Inevitably he will look upon all the rest of the world as outlanders to be feared, hated, or despised according to the rank and character assigned by tradition. Education under these conditions serves to intensify our native barbarism by appealing constantly to our lower primal instincts which are no longer necessary of exercise in a civilized society and are certainly destructive of popular government.

The only antidote for all this is the personal touch, not occasionally, but day by day; for people after all are interesting, a fact that gives rise to the proverb, "Get acquainted with your neighbor; you might like him." The fact that man is a social animal as well as a fighter is one not to be lost out of the accounting in framing a system of industrial education, for this is the saving element of the situation. On the bare principle of safety first, any system of education for a self-governing people, or any portion of such a people, must be so organized and so conducted as to prevent as far as possible social cleavage along occupational lines; for while divergent groups with but slender bonds may be held together by a military government, a democracy, to succeed, must be made up of a people as homogenous as possible, with no more differences than are necessary for occupational efficiency or inevitable from the exigencies of life.

Now, school is the place, childhood is the time, and occupation is the opportunity for laying the foundations of industrial peace, of social contentment, and of governmental security.

THE EDUCATIONAL POINT OF VIEW.

If our reasoning has been sound, two points are well established—first, that the highest productive efficiency is likely possible through separate technological schools; but, second, that from political and social considerations children should not be separated for technical training. Doubtless in rare and special cases where large numbers are not involved technological schools are justifiable; but in general and for the mass of people the children of all classes and of all purposes should be kept together, each trained for his occupation—which tends to division—and all educated for a common end—which tends to solidarity. These are the evident conditions and limitations of our problem. Are they fortunate or unfortunate from a strictly educational point of view?

If a man is to be educated only as a producer, the problem is certainly simpler than if he is also to be educated as a voter and a self-respecting member of society. It is easier to be a law-abiding producer than it is to be all that and a lawmaker besides. That is to say, when we regard the man as well as his product the problem becomes complicated because a unified system of schools is infinitely more difficult of conception and execution than is a multiple system in which each school caters to a single class, ignoring all problems except economic production and individual success. Some of us believe that the added effort is not only inevitable if society is to endure under the new conditions, but that it is well repaid in educational results.

Educationally, the advantage all lies with a unified system of cosmopolitan schools each equipped to offer technical courses corresponding to the industries of the com-

munity and taught by men who know the principles and the practices of the occupation, and also equipped to offer a body of general or nontechnical studies, taught by instructors interested not in production, but in subjects, in people, and in their institutions.

The individual student in such a school is made conscious every day of what he himself is to do in the world. He is also made conscious every day of what other men have done and thought and said in the world that has passed, and of what others will likely do and think and say in the world he is soon to enter. Now, this is education for real efficiency, because the man, as well as the product, is an object of study.

Under a system such as this if the student changes his choice of occupation as his faculties develop, he has only to enter other technical courses in the same school and he has sacrificed nothing except a few technical credits in the course abandoned. Even so he has had all the time a clear-cut motive; and a good motive is necessary to real education. The same boy, seeking technical training in an exclusively technical school, must needs settle his choice once for all as a small boy or have it settled for him by the whim of his parents, by the prospects of early gain, or relative accessibility.

It is the experience everywhere that technical courses instead of reducing interest in the nontechnical vitalize such courses and give them meaning and, therefore, interest. What the boy needs is a vision, a picture of life, not a reflection distorted by abnormal, even though heroic, characters and incidents; but a real picture of life as the boy is to see it in its relations. Until he gets that vision he may be a learner of lessons, but he will not be a scholar. For the vast majority, the 90 per cent and more, the prospect of industrial activity affords the vision.

If we take the view that industrial education has no place in the public-school system, then we shall have another system, public or private, and after the 90 per cent have been drawn away we shall have the spectacle of a school system publicly supported but available only to the 10 per cent—the children of the well-to-do. How long would such a system last? The only rational conclusion is that industrial education has a place, and a very large place, in any adequate system of publicly supported schools.

In all discussions of this character it is to be remembered that existing systems of education the world over have come down to us with all their traditions from a time in which the only function of the schools was to train the "governing class." Even when the conscious purpose of education was to train for the "learned professions" the idea was always the same, namely, that education was the prerogative of an hereditary, or at least a highly privileged and numerically small, class. Exclusiveness, superiority, conventionalism—these are the terms and ideals that traditionally attach to education, and all are inconsistent if not incompatible with a real democracy or a republic of self-governing people.

Universal education may be regarded as a privilege for the masses, but the moment such a system becomes compulsory it can be considered only in the light of national necessity and racial advancement. "Training for leadership" is not, therefore, the chief business of the public schools. What the great army of civilization wants now is not so much officers as privates, and the business of the schools is to fit for activity and for service, leaving leadership to settle itself in the only way it can be safely settled, namely, by natural processes.

The larger view of industrial education as a part of a national and rational system of vocational training was anticipated in a manner almost prophetic by the legislation founding the land-grant colleges in 1862. This legislation provided for a system of colleges, one for every State, in which the leading object should be instruction in agriculture and the mechanic arts. Previous to this time these primal industries and the mass of the people found themselves caught in an eddy, while the great river of learning and opportunity went rushing by. Under such conditions the individual

could be educated only by quitting the industries. How, under these conditions, could the industries of the country develop or the popular vote be trusted? Hence the legislation of 1862.

Fortunately the law expressly provided that classical and scientific studies should not be excluded. Either the men of those days builded wiser than they knew or they had a vision of a comprehensive system of education quite in advance of the times. At all events, here we are at the opening of the twentieth century with a national system of State universities in which are taught any and all subjects that touch the life and activities of the people. Here farmers, engineers, lawyers, physicians, teachers, journalists, scientists, authors, philologists, artists, musicians, all are educated side by side on the same campus, separated only for their technical training, their nontechnical studies being taken together in the same classrooms and laboratories. Not only that, the students of different courses live in the same houses, eat at the same tables, belong to the same fraternities and clubs, meet together and battle together on the same athletic field. This means that they learn much, indirectly and by absorption, of each others' courses and prospective occupations. It means, too, that lasting friendships are formed which cross professional lines in every possible direction, binding men together by the strongest of all bonds—personal acquaintance, mutual respect, and friendly regard.

Here is the cue for a rational system of education in a democracy; a cue to a general plan that makes the individual efficient, yet that puts the man above his profession; that draws no line between the industries and the occupations except as they represent different vocations; and that develops them all, not for individual advantage but for the public good.

And the public high schools are taking this cue at a rate never before realized in any other phase of educational development. That the plan works is evidenced by the fact that no school that has started in the new plan has ever gone back to the old; that attendance is increased, efficiency enhanced, and, more surprising than all, the nontechnical subjects are studied with a new interest, even Latin being on the increase and not being driven out as was threatened by earlier and narrower views of industrial education.

Industrial education does not need to have its place assigned by us. It has found its own place by perfectly natural processes. The position is not extreme and therefore not likely to do damage or to undergo material change. It means only that the time of the student should always be divided between the vocational and the nonvocational, the proportion depending somewhat upon the vocation and partly upon the grade of the school. In the college 40 to 60 per cent is technical; in the high school, 20 to 40 per cent. It is a new proof of the old belief that it is often easier to do two things at once than to do either one alone and take the consequences.

THE CULTURAL POINT OF VIEW.

We have been told that the true aim of real education is culture, whereas historically, whether in theology, medicine, or law, the impulse to education was frankly professional. This was not only true of our predecessors, but it is true of us and will be true of our descendants, because naturally and properly the great impulse to learning is preparation for the activities of life. And yet culture has been advanced as the aim of education.

What is culture? I do not know; but this I know, that if it is a thing either possible or desirable in a democracy it must be open to all men. It is, therefore, not conditioned upon riches, peculiarity of dress or manner, the ability to speak in tongues not understood, the creation and abundance of arbitrary conventionalities, or anything else whose design and purpose is exclusiveness.

Whatever culture may be, its essence is a kind of nobility and refinement of character knowable and known to all men. It was said of the Master that the common

people heard Him gladly. They needed no interpreter, for He spoke in the vernacular, though as a child He disputed successfully with the lawyers. I had a cultured friend, known and loved by scores who never heard that he was a critical student of many languages and thoroughly at home in many lands. I had another, a barber, with limited schooling. He spent his life in a single town, yet left more behind of refinement and beauty in the school his children attended and in the cemetery where he lies buried than had all who had gone before.

Culture is a growth from within, not a thing laid on from without like a garment. It is a personal adornment, not an accomplishment, and it is well within the grasp of every normal man who has a fair outlook upon the world and who is willing to give attention to the refinements of life and the development of character.

There is, therefore, nothing incompatible between industrial education and culture; between a life of productive energy, which is the normal state, and the refinement of character that makes the perfect man. Was not the Savior a carpenter, and did He not, like the prophets, outline life in terms of common things?

The ghost that is to be laid by industrial education is that old doctrine of the leisure class, namely, that needful labor is degrading—a thing to be endured, when inevitable, as a disagreeable necessity, and to be escaped from as soon as possible by all self-respecting and cultured, that is exclusive, people.

The great facts of life are not only inevitable, they are also holy. They are to be met by society as a whole without sacrificing a so-called "class." Hence industrial education must be made to refer to that portion of the curriculum which has to do with the industries of life, differing only in kind, not in degree, from those other forms of vocational training that fit for the professions.

"Where there is no vision the people perish." With a vision, each year and every generation adds to the results of the last, and after this fashion shall our answer be: The place of industrial education is in the schools of the people, side by side with all other subjects and all other purposes. The State university whose unit is the commonwealth is the model; and the cosmopolitan high school, built upon the same model but whose unit is the community, is the heart and the soul of a system that serves the public while it vitalizes and enriches the lives of the people.

L'ÉDUCATION PHYSIQUE EN BOLIVIE.

Par H. DE GENST,

Inspecteur Général de l'Éducation physique en Bolivie.

INTRODUCTION.

L'œuvre de l'éducation physique en Bolivie est encore toute récente. Préoccupé avant tout de sa réorganisation politique et économique, le pays ne s'est attaché vraiment à réaliser sa renaissance physique que depuis deux ans, et cela avec un enthousiasme, une telle volonté de parvenir, un succès si incroyable que nous pouvons espérer que, dans un avenir peu éloigné, il n'aura plus rien à envier aux autres pays de l'Amérique latine et qu'il pourra même leur servir d'exemple et de modèle.

Certes il existait des programmes d'éducation physique, mais rudimentaires, ils manquaient à la vérité scientifique; certes des efforts louables avaient été tentés, mais ils étaient restés locaux et par conséquent peu effectifs; certes dans le corps professoral on s'appliquait avec persévérance à propager la pratique des exercices corporels, mais peu préparé, son enseignement était empirique et manquait aux lois les plus élémentaires de la pédagogie.

Le pays d'ailleurs, par sa situation géographique même, ne se présentait pas propice au développement d'un plan général et uniforme pour l'organisation de l'éducation physique dans toute la République.

D'étendue extrêmement vaste, la Bolivie embrasse des contrées qui s'élèvent du niveau de la mer à plus de 4,000 mètres d'altitude. C'est dans cette dernière région, l'altiplanicie, que sont groupés les centres les plus peuplés et les plus importants, mais c'est là aussi, dans cette atmosphère à pression insuffisante, à oxygène raréfié, que le travail physique est le plus difficile, le plus pénible, dangereux et, même parfois impossible. Le mal des montagnes ou "soroche" y règne à l'état endémique et est un sérieux obstacle à l'exercice intensif tel qu'on le comprend dans les autres pays. Son importance est telle qu'il mérite que nous nous y arrêtions quelque peu pour en examiner les symptômes, les effets, les causes et les conséquences.

Le mal des montagnes débute par un malaise général, une angoisse, une fatigue de tout l'être; puis ce sont des nausées, des vomissements, accompagnés souvent de coliques, de diarrhée; le malade se désintéresse de tout ce qui l'entoure, éprouve une paresse intellectuelle invincible. Du côté de l'appareil respiratoire, on observe une dyspnée souvent intense et fort pénible; le pouls diminue d'ampleur et augmente de fréquence dans des proportions souvent considérables; parfois en produisant des hémorragies pulmonaires, nasales ou rénales et des troubles cardiaques de caractère très grave allant jusqu'à la mort.

Le mal des montagnes semble ne pas se manifester à la même altitude dans les différentes chaînes de montagnes et il semble même que certains endroits soient favorables à son éclosion; il existe aussi de grandes variations individuelles et l'hérédité, à cet égard, doit jouer un rôle tel, que jamais, l'indien, qui vit sur le plateau depuis un temps immémorial, n'éprouve les symptômes de ce mal; mais il n'en est pas de même du blanc émigré des plaines, du métis même, ni des animaux importés des pays à faible altitude. Souvent le mal ne se révèle qu'à des moments inattendus, malgré l'accoutumance produite par l'adaptation du milieu: la fatigue, l'épuisement nerveux, le surcroît de travail, le froid agissent en faveur de l'éclosion du mal. Les causes auxquelles on attribue le "soroche" sont multiples: les uns, simplistes, les rapportent au dégagement de gaz toxiques, à la présence de plantes et de minéraux; les autres invoquent des causes physiques: la théorie électrique aurait voulu que l'électricité s'accumulât sur les montagnes à cause de leur forme conique et que cette électricité fût la cause du mal des montagnes; Humboldt et Boussingault avaient cru qu'il était dû à la diminution dans la proportion de l'oxygène de l'air des montagnes; Lotret et Dufour attribuent les accidents du mal des montagnes à une excessive transformation de la chaleur en mouvement; puis viennent les théories chimiques: suivant M. Gavarret, le mal serait dû à l'accumulation dans le sang de l'acide carbonique; Mono¹ émet l'opinion qu'il est dû uniquement à la diminution de l'acide carbonique du sang; P. Bert voit dans la diminution de la teneur en oxygène du sang d'un homme placé dans une atmosphère raréfiée la véritable cause du mal; enfin nous trouvons les théories mécaniques: Robert Boyle, Borelli, Rostan, Guilbert et Gavarret ont admis que, sous l'influence de la diminution de pression, les gaz du sang se dégagent, deviennent libres et produisent des embolies gazeuses, d'où résulteraient tous les accidents observés; la théorie qui nous semble la plus sérieuse, parce qu'elle correspond à toutes les observations faites sur l'altiplanicie, est celle émise par H. Kronecker, de Berne² et basée sur l'existence de troubles cardio-pulmonaires résultant de l'influence mécanique exercée par la raréfaction de l'air, troubles allant jusqu'à hypertrophie cardiaque. Les expériences de P. Héger et de J. Meyer³ confirment amplement la valeur de la théorie du professeur suisse. On comprend donc quelle difficulté il faut surmonter, sur le haut plateau,

¹ Comptes-rendus de la Société de biologie, 1897, p. 223. Revue générale des sciences, 15 mars 1899, p. 178. L'académie et le mal des montagnes.

² Die Bergkrankheit 1903, Urban et Schwarzenberg.

³ Altitude et coeur droit. Extrait du Livre jubilaire, de Ch. Richet, 1912, p. 171.

quelles précautions il faut prendre, pour y organiser scientifiquement l'éducation physique, et on ne s'étonnera pas trop du retard qu'avait subi cette branche importante dans l'activité scolaire et post-scolaire de la nation bolivienne.

La région basse présente, au point de vue de l'exercice physique, l'inconvénient de participer au climat torride. Faire de la gymnastique sous une température accablante, même à l'ombre, n'est pas chose commode. A ces difficultés naturelles, se joignent celles créées par les différentes races qui peuplent la Bolivie, c'est-à-dire les indigènes, métisse et blanche, celles produites par la psychologie spéciale de tout peuple latin, par les coutumes sociales et religieuses, par l'influence d'un régionalisme accentué, par des causes multiples, souvent trop éloignées pour bien s'en rendre compte.

C'est pour toutes ces raisons que nous présentâmes, en 1914, à la bienveillante attention du Gouvernement et du Congrès bolivien, un plan d'organisation systématique dans le but de relever et augmenter le niveau physique et moral du pays.¹ Ce plan fixe les bases essentielles du problème, les moyens pratiques de le résoudre, et le Gouvernement bolivien s'est attaché, malgré la crise économique terrible que le pays traverse, à le réaliser aussitôt, progressivement et sûrement.

CONCLUSION.

Pour réaliser cette importante évolution le Gouvernement a contracté spécialement en Europe M. H. de Genat, ex-professeur à l'École supérieure d'éducation physique de Bruxelles, ainsi qu'à l'École normale d'instituteurs de la même ville, secrétaire général du Comité international d'éducation physique.

Deux cours normaux d'éducation physique ont été organisés à La Paz. La méthode suivie est basée sur les principes du suédois P. H. Ling. Après deux années d'études théoriques, didactiques et pratiques, 16 élèves (9 hommes et 7 femmes) ont été diplômés et sont envoyés en qualité de professeurs dans les lycées et collèges secondaires de chaque capitale départementale.

Des cours réduits pour les membres du personnel enseignant primaire ont fonctionné et se continueront successivement à La Paz, Potosi, Oruro, Cochabamba, Tarija, Santa Cruz et Trinidad.

Entre temps des conférences de propagande organisées par les autorités gouvernementales et par l'Etat-Major de l'armée ont été faites, un programme d'éducation physique accompagné de nombreuses illustrations, a été rédigé et édité pour les écoles primaires, des salles de gymnastique ont été construites, améliorées, installées; des plaines de jeux et de sports ont été acquises, plusieurs sociétés libres de gymnastique, dont une féminine, ont été fondées, du matériel de jeu a été acheté pour les écoles, des fédérations sportives ont pris naissance, des championnats locaux, régionaux, sportifs ont eu lieu; au mois d'août dernier le premier championnat national de foot-ball a été organisé à l'occasion des fêtes patriotiques: il réunissait des joueurs de localités éloignées de plus de 700 kilomètres.

L'enseignement normal n'a pas été négligé: un professeur a été contracté en Europe et est chargé de l'enseignement à l'École normale de Sucre. Une salle moderne, véritable modèle en son genre, a été élevée et installée avec des appareils acquis spécialement en Europe.

Des cours spéciaux ont été organisés à l'École normale pour instituteurs et institutrices ruraux. Cette école qui fonctionne à Umala est destinée à former le personnel des écoles du haut plateau et spécialement de la région où vivent les indiens aymaras.

Des cours analogues seront ouverts l'année prochaine pour la région habitée par les indiens quichuas, à l'école normale rurale de Sacaba (Cochabamba).

Les locaux et le matériel ont été améliorés fortement, des bains-douches créés dans quelques écoles, des excursions scolaires organisées, des démonstrations de gymnastique ont appelé l'attention du grand public; la presse, à son tour, s'est livrée à une forte propagande en faveur de l'éducation physique.

¹ Informe general sobre la organización sistemática de la Educación física (anexos a la Memoria presentada al H. Congreso Nacional. La Paz, 1914.

Une investigation sur l'état physique des écoliers a été organisée par la Direction générale de l'enseignement, une loi organisant la visite médicale scolaire a été promulguée, enfin des associations puissantes de boy et girl scouts ont été fondées dans différentes localités. Enfin, la fondation d'une section speciale d'Éducation physique et de Travaux manuels à l'École normale supérieure (La Paz) a été proposée et s'ouvrira en 1918.

Nous joignons au présent rapport quelques documents annexes: programme d'éducation pour l'enseignement primaire, livret du scout bolivien, annuaire de la La Paz Foot Ball Association.

Ils montreront l'état de l'organisation et les tendances suivies par l'éducation physique en Bolivie.

Malgré les circonstances essentiellement difficiles, une situation économique critique, grâce à une volonté énergique, et un désir irrésistible de progrès, le Gouvernement bolivien réalise et perfectionne l'œuvre entreprise, souhaitant pour son peuple plus de beauté, plus de force, plus de sagesse.

LAS BELLAS ARTES EN LA INSTRUCCIÓN PÚBLICA DE AMÉRICA.

Por PEDRO P. TRAVERSARI, *Director General de Bellas Artes del Ecuador*; JOSÉ G. NAVARRO, *Director de la Escuela Nacional de Bellas Artes del Ecuador*; and SIXTO M. DURÁN, *Director del Conservatorio Nacional de Música del Ecuador*.

I. LA INSTRUCCIÓN CIENTÍFICA AMERICANA DEBE MARCHAR CONJUNTAMENTE CON LA EDUCACIÓN ARTÍSTICA, EN LA ENSEÑANZA ELEMENTAL, SECUNDARIA, UNIVERSITARIA Y TÉCNICA, COMO MEDIO DE PERFECCIONAMIENTO DE LA RAZA.

La América, el nuevo mundo, los numerosos pueblos del Norte y Sur de su continente presentan un escenario grandioso, que aun cuando dividido en variados organismos, forma un solo conjunto con iguales ideas y carácter, un solo y progresivo espíritu. Su pasada historia y su presente, confirman que, si ese agrupamiento de naciones libres y demócratas que hoy forman el panamericanismo, ha pasado por múltiples vicisitudes, no por eso se ha perdido su faz peculiar, puesto que, en medio de la civilización moderna se conservan siempre intactas sus cualidades excepcionales de raza, su propia fisonomía étnica y estética, sus condiciones geográficas, en naturaleza sublime.

La raza de los aborígenes de América, aun cuando en el día tan mezclada, mantiene vivo el germen característico de su sangre, y no olvida sus tradiciones, el ingenio de su personalidad, la instrucción de sus antepasados que se revela en esas formas sencillas de un arte particular.

Ahora más que nunca, ante el cuadro espantoso del desequilibrio europeo, renacen con mayor vigor los sentimientos íntimos de la raza que constituyen los pueblos americanos, sean estos de evolución española o británica. Se siente una necesidad inaplazable, la seguridad de la vida por sí misma y en sí misma.

Ya por desaparecido el decantado peligro de doctrinas personalistas, toda ella se reduce al ideal de una doctrina panamericana, con una misma ley de solidaridad que educa e instruye a sus pueblos, conduciéndolos por un mismo camino a lo práctico con lo bueno y lo bello. * * *

El compuesto humano es un organismo apto para el perfeccionamiento de sus múltiples facultades: cuales más, cuales menos, según su organización individual; luego, todas aquellas pueden alcanzar un grado relativo de desarrollo, avanzando más, aquellas facultades que por razón de organización se encuentran en mayor aptitud. De esta desigualdad, que es un hecho antropológico, resulta el enorme beneficio de la especialización que en la vida civil pone al individuo en la situación de aprovechar de servicios perfectos en todo orden de necesidades. Mas, no se olvide que para el fin humano de la civilización en general, no se podrá llegar a resultado

ninguno práctico, sino se educa al individuo y no en parte, sino en su todo psico-fisiológico, esto es, en el conjunto de sus facultades educables; de donde se deduce que conocer éstas en su mayor extensión, es la base para el procedimiento educativo cuyos beneficios individuales y colectivos no es necesario ponderar.

Ahora bien, dividiendo las facultades humanas por sus respectivas funciones, tenemos tres grandes grupos de clasificación y así llamamos intelectuales a las primeras, morales a las segundas y físicas a las terceras, aun cuando el primero y el segundo género tengan un origen común: el entendimiento; llámese tal, o conciencia en los actos reflejos, o voluntad, tratándose de los actos volitivos. Desde luego, la prioridad aquí establecida tiene su razón en la naturaleza de la función, circunstancia que no imprime un sello de excelencia de unas funciones con respecto a las otras, ya que siendo todas humanas, todas son igualmente importantes, detalle necesario de tener en cuenta ya que éste ha influido muchas veces y sigue influyendo en el criterio educativo según los pueblos y las épocas. Así vemos en la antigüedad y aún en nuestros tiempos, con pequeñas diferencias, preferidas ya las funciones del primer género, ya las del tercero y poco o nada atendidas las del segundo, sino es en una forma religiosa, no siempre del todo conducente a su más amplio desarrollo.

No conviene perder de vista que funcionan las facultades humanas de dos maneras diferentes: Espontánea o discursivamente, es decir, por intuición o por razonamiento y que por lo mismo, facilitar al individuo estas dos formas de operación, principalmente en lo intelectual y en lo moral, es educarlo y perfeccionarlo. Quizás también, desde este punto de vista, el sistema actual peca por defecto ya que se ha contraído más a la segunda forma que a la primera. En efecto, el entendimiento o concibe directamente: v. g., cuando contempla el axioma o discurre pensosamente por la reflexión; v. g., cuando razona un teorema. La voluntad, a su vez, u obra espontánea y rápidamente por el bien, como cuando se expone la vida por salvar al naufrago, o discurre de la conveniencia de la acción como cuando se da la limosna. En el orden físico se distinguen más claramente las dos formas de funcionamiento.

De lo visto hasta aquí, se deduce que más provecho se hace al individuo facilitándole por la educación el ejercicio de sus facultades en la primera forma, esto es, en la forma espontánea que en la segunda, aun cuando los medios sean más difíciles, principalmente en el orden intelectual. En el orden moral, además de las sugerencias racionales, existe para el individuo un medio capaz de predisponerlo a lo bueno espontáneamente: es el arte. No se habla de los artistas profesionales, quienes están sujetos a una psicología especial, sino de la entidad arte como medio de perfección de la raza y es por esto que dijimos que todas las facultades del individuo pueden y deben alcanzar por la educación su grado siquiera relativo de desarrollo en la educación colectiva. Y es en este sentido que ningún organismo es insensible a lo bello, y no siéndolo, toda educación que prescinda del arte será incompleta. Es por lo mismo que dijimos que si educar es desarrollar todas las facultades humanas en el individuo, no podemos menos de concluir que el estudio artístico debe ocupar lugar preferente en la instrucción primaria y superior de nuestros pueblos. A la verdad, no siendo el sentimiento un patrimonio de sólo naturalezas privilegiadas, sino de la humanidad, el arte, a su vez es un patrimonio humano y una fuerza poderosa de civilización y mejoramiento colectivo de las razas que debe cultivarse con especial empeño. De este hecho, se deduce lógicamente que la obra humana científica, deberá ser al mismo tiempo bella o artística y que la educación artística deberá marchar gradual y copulativamente con la científica, sin pretender el imperio absoluto del ideologismo árido, ni del materialismo inanimado.

Las bellas artes, ya sea por razón de estética, ya sea por sus virtudes divinas, ya sea por sus acciones exquisitas y morales, obran decisivamente en la humanización de los sentimientos individuales; luego son un factor decisivo en el mejoramiento humano y un ramo importantísimo en la instrucción, desde que los hombres están obligados a educarse no sólo para ser sabios, sino para ser buenos y desde que la humanidad

aprovecha y necesita así de la sabiduría como de la bondad y de la belleza. Cultivemos las artes en América para que la sabiduría explore mejores horizontes de investigación, y para poder, entre nosotros, desterrar aquellos que sólo producen la ruina y la muerte.

II. EL ARTE EN AMÉRICA DEBE SER AMERICANO. FUNDACIÓN DE UN CENTRO SUPERIOR DE INSTRUCCIÓN ARTÍSTICA. INSTITUTO ARTÍSTICO PANAMERICANO, SU OBJETO Y ORGANIZACIÓN.

Los caracteres del arte resultan de las condiciones morales y materiales en las cuales se desarrolla, condiciones que difieren según la época y el medio ambiente, evolucionan con el progreso y hacen, a su vez, evolucionar los estilos. Hoy, como siempre, se tiende a la nacionalización del arte y a la personalidad artística formada en una alta educación nacional. El Estado no debe tolerar, dice el Instituto Internacional de Arte Público, la enseñanza artística que no esté ceñida eficazmente al respeto y al estudio de las tradiciones nacionales en arte.

La enseñanza artística debe restablecerse sobre bases nacionales y afirmarse según inspiración propia y mediante el espíritu del medio y de la época. ¿Qué fruto saca el arte nacional con la formación de artistas en el extranjero? Destruir las tradiciones etnológicas.

Las cuestiones que atañen a la enseñanza, son muy delicadas: hay que ver siempre no sólo el bien que se trata de hacer sino el mal que se pretende evitar. Y en las artes el mal producido por una mala educación es peor que en las letras; porque el pensamiento puro es algo más individual que el traducido por la materia, y si el estilo del escritor es un don natural, el estilo del pintor, del escultor, del músico son una cualidad adquirida. La enseñanza sería y metódica de la tradición, la continuidad de la doctrina son, pues, todavía más necesarios a los artistas; su espíritu y su voluntad deben estar fuertemente atados con la cadena de la disciplina formada por esos elementos.

Hasta ahora el arte americano en todas sus manifestaciones ha sido, no una derivación natural del arte europeo, sino una dependencia tal que ha borrado toda huella del arte de los aborígenes e impedido la formación de un arte propio. Nuestros artistas han sido y siguen siendo artistas europeos por su escuela y, si bien algunos se han inspirado en motivos americanos en sus composiciones, aparte de constituir esto un ejemplo muy aislado, nada arguye en contra de lo que aseveramos; puesto que la selección de un tema no tiene por sí sólo la suficiente fuerza para inspirar carácter a una obra de arte, ni menos para fundar escuela. Para ello se necesita que el artista viva y se sature del ambiente de América y desarrolle los temas que éste le brinda al amparo de la naturaleza americana, que para la pintura tiene colores y forma especiales, para la escultura y arquitectura, material que no tienen los europeos y para la música, cantos de gamas y cadencias desconocidas. Toda esta materia prima estudiada en nuestro propio ambiente por nuestros artistas, hijos de América, daría lugar a la creación y desarrollo de nuevas formas de expresión y, por consiguiente, de un nuevo arte legítimamente propio de nuestra América.

Nuestros artistas se han impuesto el imprescindible deber de ir a estudiar directamente en alguna de las naciones ya consagradas por el arte, o a perfeccionar sus conocimientos, si éstos los han adquirido en algún instituto americano. ¿Qué ha resultado de ello? Que esos artistas formados o perfeccionados en ambiente distinto, han venido a ser exóticos en nuestra tierra, exotismo que no lo notamos, por estar ya acostumbrados a la contemplación del arte europeo sin considerar la idea de la posibilidad de un arte propio. ¡Hasta los gobiernos han hecho labor contraria a esta idea! Ellos han mandado y siguen mandando por centenares, estudiantes a Roma y París, a España y Bélgica, para que vengan ¿qué? artistas romanos o parisienses, españoles o belgas, a difundir y propagar el arte europeo. ¡He aquí, pues, el arte americano condenado a perpetua esclavitud! Es necesario reaccionar contra ella

y proclamar de manera efectiva este axioma: "El arte en América debe ser americano." Sí, el arte en América, tiene que ser americano. ¿Pero cómo alcanzar esta aspiración suprema? Con la fundación en América de un gran centro superior y colectivo, en donde se perfeccionen o estudien los artistas americanos. Este centro debe estar en América, y a su fundación y a su sostenimiento deben cooperar los Gobiernos todos de América. Allí irían todos los pensionados de arte que los Gobiernos actualmente sostienen en Europa, e irían como a su propia casa. En Europa, casi no hay país que no tenga en Roma, considerada como el centro más artístico del mundo, una academia. El clero americano tiene allí el Gran Colegio Pío Latino-Americano, a cuya edificación concurren todos los gobiernos eclesiásticos latino-americanos y en el cual se han educado muchos de nuestros obispos y sacerdotes. No hay, pues, dificultad alguna para fundar en América un gran instituto artístico pan-americano. El Gobierno ecuatoriano, como todos los demás, podría actualmente, contribuir para la fundación con una cantidad especial señalada en el presupuesto del Estado y para su conservación y funcionamiento, con lo que invierten en pensiones de arte en Europa.

Ahora bien, como este centro sería más que instituto de enseñanza, instituto de perfeccionamiento, se establecerían antecedentes de reglamentación uniforme, intercambio de profesores y alumnos entre los institutos artísticos de los diversos países americanos y ciertas condiciones individuales para el ingreso de los aspirantes a pensionados en ese instituto, siendo la principal la edad de 30 años para ser admitido a concurso. La edad de 30 años ha venido a ser la edad reglamentaria; porque la experiencia ha demostrado que es la edad media de la madurez del genio y del ingenio. Puede ser que se posea a los 25 años los procedimientos de la pintura; pero el dibujo que es el alma de aquella y el estilo sin el cual no se crea nada duradero, rara vez se poseen a los 25 años. La escultura, ciencia de las formas y de la abstracción, demanda más tiempo todavía, porque es preciso luchar contra dificultades manuales, aprender a domar las materias más rebeldes. La música y la arquitectura exigen conocimientos más numerosos, estudios más variados y educación tan completa que se puede afirmar que no hay músico ni arquitecto antes de los 30 años.

Resumiendo, tenemos que, con una reglamentación uniforme en todos los institutos de arte americano, unida a los requisitos de la edad de 30 años para entrar al concurso de las pensiones anuales para que los aspirantes puedan ir a perfeccionar sus estudios en el Instituto Artístico Pan-Americano tendríamos cumplidos los justos anhelos de tener arte americano y artistas de nuestra América, de nuestra raza y de nuestro tiempo.

En cuanto a la fundación del instituto débese llevar a la práctica en un país de los Estados Unidos de Norte América, bajo la protección del Gobierno Americano y con subvenciones de los demás países, y para su organización, debe el Congreso Pan-Americano nombrar un comité local que, a su vez, nombrará un representante o dos en cada una de las naciones americanas. Concluidas las labores del comité y las de sus delegados o representantes—las que durarán un año—se inaugurará el instituto con el personal técnico necesario al plan que el comité adopte, personal en el que debe figurar, por lo menos, un profesor de cada uno de los países adherentes, y para cada, una de las secciones siguientes: I, Pintura; II, Escultura; III, Arquitectura; IV, Música; V, Teatros.

III.—ACUERDO ENTRE LOS INSTITUTOS ARTÍSTICOS DE CADA PAÍS DE AMÉRICA POR EL CUAL SE ESTABLECEN RELACIONES MUTUAS ENTRE SÍ. FORMAS GENERALES. CAMBIO SISTEMÁTICO DE PROFESORES Y ESTUDIANTES. RECONOCIMIENTOS DE TÍTULOS. INTERCAMBIO DE OBRAS DE ARTE NACIONALES. ESCUELAS. INSTITUTOS. ACADEMIAS. CONSERVATORIOS. GALERÍAS. TEATROS NACIONALES EDUCATIVOS PARA EL PUEBLO.

Para poder llegar a establecerse provechosas relaciones, de mutua conveniencia, entre los países asociados al Congreso Panamericano, en todo aquello que se refiere

a la educación de los sentimientos del pueblo, y asimismo, para poder llegar a dar una forma práctica en la instrucción pública a esa bella educación que nos llevará, no sólo a una próspera democracia, sino también a todo lo bueno y útil para nuestras razas; se necesita que este congreso, inspirado no sólo en simples ideales, haga práctica una invitación especial a todos los institutos artísticos que funcionan en los diferentes países de la América, con el objeto de que éstos se inscriban en la secretaría general del respectivo comité que será nombrado al efecto. Los fines que se perseguirán con esta inscripción son el de dar una forma definitiva y provechosa a las cuestiones que dejamos tratadas en el presente trabajo; cuestiones todas que nos hemos permitido proponer y recomendar a la consideración del ilustre congreso.

Efectuadas esas inscripciones, con la autorización previa de los respectivos Gobiernos de los países en donde funcionen los diferentes establecimientos de artes, cada uno de éstos nombrará, en el momento de dicha inscripción, un miembro que lo represente en las reuniones y asuntos que deba tratar el susodicho comité artístico.

Este comité funcionará permanentemente en una de las ciudades de los Estados Unidos, que el congreso le determine y, una vez que haya recogido todos los pliegos de instrucciones que envíen los institutos inscritos, procederá a formular un acuerdo, el que también, una vez aprobado por el comité, será una ley obligatoria para cada uno de dichos establecimientos. * * *

Las bases para formular el convenio o acuerdo panamericano en referencia, están comprendidas en el siguiente proyecto:

1. Los institutos inscritos presentarán a sus respectivos Gobiernos los planes de estudios correspondientes a la enseñanza de bellas artes que debe incorporarse a toda instrucción; sea ésta elemental, superior o técnica.

2. Cada instituto artístico establecerá, por lo menos, una clase especial de arte local o nacional, histórica y práctica, tratando de que en la enseñanza general se imprima ese carácter peculiar.

3. Los temas de estudio o composición en cualquier género de arte serán inspirados, con preferencia, en motivos nacionales y de los aborígenes.

4. Se adoptarán como textos de enseñanza en cada establecimiento, las obras de autores nacionales que les corresponda. Los textos o métodos extranjeros se usarán como de consulta y sólo se incorporarán a los programas a falta de los nacionales, teniendo entre esos la preferencia las obras americanas.

5. Las publicaciones nacionales u obras de cualquier género de arte que se impriman deberán ser remitidas, sin demora, por el instituto artístico correspondiente a cada país en el número de un ejemplar para cada uno de los institutos análogos adherentes a este acuerdo.

6. Establécese el compromiso de que quedan suprimidas todas las becas de estudiantes americanos en los establecimientos artísticos europeos.

7. Las becas se establecerán sólo entre los establecimientos que existen en las diversas naciones de América y sólo para los estudiantes que hayan terminado sus estudios u obtenido un título en su propio país.

8. Los becados de cada país a otro de América, recibirán ya sea en el Instituto Artístico Panamericano, ya sea en cualquier otro, enseñanza gratuita; teniendo cada país el derecho de mantener un estudiante por cada sección.

9. Los cargos en cada instituto de América serán desempeñados por artistas o profesionistas nacionales o nacionalizados. En el caso de que no existiese en un país, persona preparada para el desempeño de una cátedra, se podrá encargar de ésta, con el carácter de interino, a un extranjero, teniendo siempre la preferencia un americano.

10. El país que suscriba este acuerdo, se obliga también a contribuir para el sostenimiento del Instituto Artístico Panamericano con el minimum de 250 dólares anuales, los que se agregarán al presupuesto que el Gobierno de los Estados Unidos destine para el funcionamiento de dicho instituto.

11. Todos los establecimientos inscritos deberán remitirse entre sí y a cada uno de ellos, todos los decretos oficiales, estatutos, reglamentos, disposiciones, etc., que se hayan dictado o se dicten para el funcionamiento de éstos, en las respectivas escuelas o institutos artísticos, etc. Este intercambio de reglamentaciones también debe establecerse con el Instituto Artístico Panamericano.

12. Los profesores o artistas designados por cada establecimiento—en cada país—como aptos o distinguidos para su desempeño profesional internacional, serán los que tendrán derecho para figurar en una lista que se enviará anualmente a cada instituto para los efectos del intercambio del profesorado que se establecerá entre las diversas naciones de América.

13. Asimismo, para facilitar el intercambio de profesores y artistas, todo establecimiento inscrito está en la obligación de comunicar a los demás de los diferentes países, los grados y títulos que expida anualmente, con el retrato del agraciado.

14. Los títulos expedidos en un instituto cualquiera, serán reconocidos en todos los países de América, sin más trámite que la legalización de las firmas de los documentos respectivos.

15. Los profesores de los establecimientos inscritos tienen el derecho de usar un distintivo, o sea la insignia que, para el objeto de ser reconocidos se determine por el comité.

16. Todos los institutos tienen el deber de contestar y atender un pedido de otro, en el orden de lo posible.

17. Cada dos años se celebrará una exposición o concurso internacional americano de arte, en un país u otro, según sea el turno establecido para el efecto.

18. De entre las obras de pintura escultura y música que produzcan los alumnos de cada establecimiento, la dirección de éste elegirá una anualmente, la que será mandada por turno a la galería o establecimiento de otro país, de conformidad con la lista que, previa y expresidentemente, se fije, para el objeto, por el comité.

19. Todos los institutos artísticos están en el deber de hacer la debida propaganda para la fundación de un teatro nacional dramático, en sus respectivos países; con el carácter popular, para ilustrar y educar las costumbres del pueblo, y amenizar las labores de su vida.

20. El intercambio de obras musicales y dramáticas se considerará incorporado al artículo 5 de este acuerdo.

21. Las Compañías de Dramas Nacionales establecerán en su respectivo país un directorio, el que se pondrá en relaciones con el de los demás países.

22. El Instituto Artístico Panamericano está en la obligación de organizar el intercambio de Compañías de Dramas Nacionales entre las diferentes naciones, fomentar este arte y buscar los medios de la mutua protección entre sus artistas.

23. Todos los institutos que se encuentren comprendidos para la vigencia de este acuerdo quedan además obligados a incorporar todas estas disposiciones a las del reglamento del respectivo instituto, formando, así, de hecho, parte de él.

24. Los Gobiernos prestarán todo su apoyo y facilitarán los medios que están a su alcance, dando toda su protección, para la realización de los actos fijados en el presente acuerdo.

IV. LEGISLACIÓN GENERAL AMERICANA DE BELLAS ARTES—COOPERACIÓN DE LOS GOBIERNOS DE AMÉRICA PARA LA REORGANIZACIÓN UNIFORME DE LA EDUCACIÓN POPULAR ARTÍSTICA Y PARA SU DESARROLLO—"CONGRESO ARTÍSTICO PANAMERICANO."

La Unión Panamericana constituye una manifestación grandiosa de la civilización y cultura de los países que forman su continente; es la prueba más clara de que los sentimientos generosos de democracia que caracterizan a las razas americanas se ponen en toda evidencia ante la humanidad entera, llevando a la práctica todos los

recursos que significan una educación popular, con la que, se llega, por una misma senda, a la conquista del bienestar y gloria apetecidos por la América.

El medio más poderoso que posee la humanidad para conducirla a una civilización ideal, es el cultivo de las bellas artes, razón por la cual unánimemente se reconoce su utilidad en toda instrucción, sea ésta impartida en las escuelas de educación general como en los establecimientos especiales. Las naciones americanas no han descuidado esta enseñanza, pero, desgraciadamente, hasta hoy, ella se encuentra sometida a diferentes disposiciones o leyes especiales aisladas, que no sólo resultan incompletas, sino que son impropias para cada país, por lo que no se ha llegado aún a los resultados apetecidos.

Es indudable que esa parte de la civilización humana que corresponde tan ampliamente a las bellas artes, está organizada, entre nosotros, de la manera más anárquica y menos adecuada; sintiéndose, por lo mismo, la necesidad de una legislación amplia y uniforme, cual lo exige la civilización popular, las relaciones entre los países americanos y la mutua conveniencia.

Para dar principio a la reorganización de la educación artística en toda instrucción panamericana es indispensable que los Gobiernos respectivos se adhieran, de modo especial, al art. 11 del acuerdo, cuyo proyecto presentamos, para los efectos del intercambio de todas sus leyes, disposiciones, reglamentaciones y programas de estudio, decretados sobre la materia, en sus propias naciones. Estas leyes, etc., serán remitidas, por obligación adquirida, al "Instituto Artístico Panamericano" de los Estados Unidos. Dicho instituto, a su vez, quedará comprometido, para que después de seis meses de su funcionamiento, publique una recopilación de todas esas disposiciones.

En esta recopilación figurarán, también, todas las demás disposiciones sobre teatros, museos, y arqueología artística, correspondientes a cada uno de los países inscritos; como también, un Apéndice con los proyectos o indicaciones que, sobre las materias, remita cada país, para el efecto de formular definitivamente una "Legislación General Americana de Bellas Artes."

Una comisión nombrada del seno del "Instituto Artístico Panamericano" se encargará de atender las comunicaciones recibidas de cada país, con el fin indicado y correrá a cargo de esta comisión todo cuanto se relacione con la obra.

La "Legislación General Americana de Bellas Artes" constará, por lo menos de tres secciones; en la primera de éstas, figurarán el acuerdo ya propuesto y todas las otras disposiciones que puedan tomarse de carácter internacional o general, aprobados por un Congreso Científico Panamericano, por el comité nombrado expreso y por la comisión que dejamos indicado. En la segunda sección se hará constar toda ley particular, etc., en vigencia, para cada uno de los institutos artísticos inscritos de los diferentes países; dividida en capítulos, correspondiéndole uno a cada nación. La tercera sección se destinará, exclusivamente, para los planes de estudio de cada país con los programas respectivos.

El trabajo de la legislación a que nos referimos será presentado por la correspondiente Comisión a un "Congreso Artístico Panamericano" convocado, expresamente, por el Congreso Científico Panamericano, para que aquél se reúna en Washington, en el mes de septiembre de 1917 u otra fecha convenida. Dicho congreso artístico aprobará la legislación general presentada por la comisión respectiva, la que será reconocida por todos los Gobiernos americanos que tomen parte. Como temas de discusión en este congreso, servirán, también, todas las cuestiones que se presenten y que deban resolverse para el mejor porvenir del arte americano como para el bien común, desarrollo de la instrucción artística y educación moral de los pueblos panamericanos.

EDUCAÇÃO PHYSICA, INTELLECTUAL E MORAL.

Por LIBERATO BITTENCOURT,

Professor do Instituto Historico e Geographico Brasileiro, Rio de Janeiro, Brasil.

IDEIAS PROPEDEUTICAS.

O mundo é governado, não pelos homens de sciencia, mas pelos homens de vontade. Ego.

Tripla a vida do homem normal: a vida physica, a vida intellectual e a vida moral.

Na vida physica ou vegetativa, o homem é um verdadeiro animal: come qual irracional inferior, simplesmente para poder viver e para poder gosar; dorme como o leão ou como o tigre, exclusivamente para restaurar as energias despendidas, nas luctas empenhadas a cada passo.

Não assim na vida intellectual: aqui o homem se apresenta um ser verdadeiramente superior, o rei chamado da criação. Então elle se destaca limpamente dos irracionais, aos quaes busca impôr intelligentemente a sua vontade superior e soberana. Physicamente o tigre é bem mais forte que o homem: tem mais que este a força bruta, e tambem a agilidade e a dextresa dos felinos. Inteiramente desarmados, o tigre e o homem, este cahirá fatalmente sob as garras afiadas e fortissimas daquelle, em luta ingente e não vulgar. Mas o homem, mais intelligente que o seu poderoso adversario, inventa a arma de fogo, trepa celere na aroeira frondosa e presto deita por terra o rei até então victorioso das florestas.

Pela força de sua intelligencia, e só por isso, o homem consegue dominar todos os irracionais, assim postos intelligentemente aos seus serviços e necessidades.

Mas é pelo valimento moral, pelas qualidades de caracter, que os homens se destacam uns dos outros, na vida em sociedade ou em conjuncto.

Por mais estranhos que pareça a afirmação, e ella infelizmente ainda o é muitissimo no Brasil, o amor de gloria, a prudencia, o patriotismo e a vontade, na lucta continua pela vida, deixam a perder de vista a lucidez de intelligencia, a imaginação, a cultura intellectual e a memoria.

Eu me explico.

Um homem robusto de corpo e de superior intelligencia primorosamente cultivada, mas sem a coragem altiva dos perigos e embates, chega um dia á borda de um precipício, que precisa de transpôr. A vida é plena de situações taes. A principio elle encara tímido o perigo. Depois, forçado á passagem, cada vez mais tímido, vacilla, escorrega e cae sem forças.

É um vencido.

Um outro homem, não tão sadio nem tão erudito, mas moralmente educado e fortalecido, encara altaneiro o obstaculo encontrado, e segue avante o seu destino.

A superioridade deste sobre aquelle é indiscutivel.

A vida pratica é repleta de casos semelhantes, que se succedem com a rapidez do raio, por todos os recantos.

Só triumpha na vida o lidador que tem aos seus serviços a necessaria robustez de corpo, a precisa constituição intellectual e, sobretudo, as necessarias qualidades de caracter.

Os tímidos, os indolentes, os viciados e os perversos, por muito grandes que lhes sejam as qualidades intellectuaes, a lucidez da intelligencia ou o poder da erudição, não podem chegar ás primeiras posições sociaes: porque o mundo é governado, não pelos homens de sciencia, mas pelos homens de vontade.

Quem observar attentiosamente a vida collectiva, da mais remota antiguidade aos nossos dias, chegará sem trabalho á suggestiva conclusão: as qualidades intellectuaes, brilhantissimas durante o tempo de paz, são completamente escurcidas, no tempo de

guerra, pelos attributos valiosissimos do character. E como a vida é uma lucta, no predomínio das moraes qualidades é que reside o segredo dos grandes successos.

Homens de profundo saber não chegam jamais ás posições de destaque social. É um facto ao alcance de todas as vistas. Por que? Porque a physiologia social em nada differe da individual: aqui o desenvolvimento exagerado de um orgão acarreta a atrophía de um outro, não menos importante; alli a mesma anomalia organica.

O desenvolver exagerado do corpo costuma atrophiar o intellecto, assim como a cultura demasiada deste, acaba por enfraquecer extraordinariamente as mais notaveis virtudes moraes.

Quando se encontra um homem de desmedida força physica, um homem a Sansão, fraco lhe é fatalmente o intellecto, e tambem a organização moral. E os moços que se applicam demasiado ás conquistas scientificas, acabam irremediavelmente com visivel enfraquecimento pulmonar.

Os exemplos abundam ás nossas academias e escolas.

A educação deve visar principalmente tornar o homem apto para as grandes batalhas da vida. E si estas são physicas, intellectuales e moraes, a educação, para ser scientificamente conduida, tem que se subordinar cegamente ás mesmas imposições e exigencias. Isto é: ella deve ser physica, intellectual e moral. E como é pelas qualidades de character que o homem se distingue dos outros homens, nas posições a occupar, maximo por isso mesmo o cuidado a dispensar á mocidade, no apuro dos predicados moraes indispensaveis.

Todo e qualquer collegio ou lyceu, escola ou gymnasio, academia ou universidade, todo o centro de educação, em summa, no Brasil ou na India, nos Estados Unidos ou no Japão, deve ter em mira este ideal sublime: ministrar cuidadosamente á mocidade seria e solida cultura physica, intellectual e sobretudo moral.

Por outras palavras, ao alcance de todos os espiritos: na educação consciente da mocidade, as faltas contra a disciplina, a obediencia, a subordinação, a ordem, isto é, as faltas contra a moral, devem ser mais graves que os erros de grammatica.

Tenho quarenta e seis annos de idade e desde os verdes annos que me dedico com ardor e convicção ao magisterio. Sou lente de academia superior e director de estabelecimento de ensino primario, complementar e secundario, por mim fundado na cidade do Rio de Janeiro. Falo então de cadeira, em questões de semelhante natureza. Todo o menino, o brasileiro pelo menos, é mais ou menos vivo, mais ou menos intelligente. Nem todos, porem, accusam sensiveis progressos gymnasticos. Muitas vezes até um menino visivelmente menos intelligente que outro, revela um progresso gymnasial bem mais accentuado que este outro. Exemplifico.

No Gymnasio que dirijo havia em 1914 um mulatinho de treze annos, de vivissima intelligencia, um verdadeiro talento: áquella idade, elle já apprehendia com extrema facilidade as mais serias conquistas mathematicas. Nada se lhe apresentava difficil. Mas não fazia progresso sensivel na classe que frequentava: porque faltava demasiado ás aulas, não prestava a devida attenção ás mesmas, barulhento, falador, impossivel. Creado á rua, ao Deus dará, não havia o menor habito de disciplina, de obediencia, de subordinação, de ordem. Um verdadeiro perdido, em summa.

De que lhe servia então o poder de intelligencia?

Esforcei-me quanto pude para lhe melhorar as qualidades de character, na fagueira esperanza de fazel-o um dia cidadão honesto e nobre. Tinha melhorado alguma coisa; mas um certo dia não mais compareceu ás aulas.

Naturalmente perdeu-se por ahi além, inteiramente inutil para si e para os seus.

Não ha contestar: quando boas qualidades de character existem, os attributos da intelligencia podem ser todos elles aproveitados; mas quando ha falta absoluta de bons predicados moraes, de subordinação e de ordem, de disciplina e de vontade, como no exemplo que citei, a mais lucida intelligencia será então totalmente desproveitada.

Cuidar, pois, da educação moral deve ser a preocupação maxima do educador adiantado e convencido.

Como? Descurando por acaso a educação physica e pouco apreço dando á cultura intellectual?

Mil vezes não. A educação do character tem que repousar sobre a cultura do intellecto, como a erudição sobre os predicados varios do corpo.

Tanto importa afirmar, em bôa linguagem portugueza, que a verdadeira educação é tambem tripla: physica, intellectual e moral.

IDEIAS FINALISTICAS.

I. EDUCAÇÃO PHYSICA.

Um homem que ingere continuamente coisas que lhe não são necessarias á economia, por força que acaba anormalizando o proprio corpo: o fumante physicamente é um anormal. L. B.

A educação physica da mocidade não é coisa de somenos importancia: ella deve ser conduzida intelligentemente, de modo a permittir ao futuro cidadão a posse feliz de um corpo sadio e forte, a aquisição integral das mais notaveis qualidades physicas.

Tão grande ideal pratico será obtido pela alimentação e por exercicios physicos superiormente conduzidos.

O principal alimento do homem é o ar; depois a agua e o leite; por fim fructas, carne, certas farinhas, verduras e legumes.

Um cuidado especial deve ser empregado pelos pais e preceptores, afim de que organismos em formação nunca respirem um ar confinado e impuro. Compartimentos pouco arejados ou regiões visivelmente insalubres devem ser de vez abolidos. Um tuberculoso que foge em tempo á vida buliçosa das cidades, melhora logo extraordinariamente: porque os ares do campo são muito mais oxygenados e puros. Essa cor pallida, do menino brasileiro das cidades, é um exemplo seguro de que elle não está a absorver o ar puro, que lhe convem á existencia em formação. E si para o adulto o ar viciado é nocivo, imagine-se para as creanças, organismos ainda em formação.

A agua deve ser de excellente qualidade, agua de nascente e não de poço. Nas regiões paludosas, onde é ella ordinariamente de inferior qualidade, deve ser filtrada anteriormente. E nos collegios e escolas convém que seja ella sempre filtrada, antes de bebida. Quanto ao leite, alimento poderosissimo, é necessario um cuidado todo especial. Para que o homem venha a ser forte physicamente, é necessario que elle seja em principio creado ao peito: á falta de leite materno, deve-se ministrar á creança o peito farto de uma boa ama de leite. A amamentação artificial nunca é perfeita. Depois que a creança deixa o peito, deve-se-lhe ministrar alimentação lactea, pelo menos tres vezes ao dia; mas bom leite de vacca ou de cabra. E durante toda a existencia, o leite nunca pode ser substituido com vantagem. Um copo de leite á ceia, com dois ou tres biscoitos, constitue uma excellente refeição nocturna, mesmo para um adulto forte.

As fructas, quando bem amadurecidas, constituem um excellente alimento solido. O mesmo se diz da carne de vacca, das carnes brancas e de certas farinhas, verduras e legumes. É preciso, porem, não exagerar a alimentação, si se quizer sempre o corpo sadio e forte.

Os organismos que se nutrem especialmente de fructas têm uma robustez physica admiravel. O mesmo se dá com o omnivoro, do Rio Grande do Sul por exemplo. Porque é preciso que se diga, uma vez por todas: a constituição dentaria do homem demonstra á evidencia que elle deve tambem comer carne; assim como a curta extensão dos seus intestinos prova que elle não pode ser um vegetarianista. Algumas excepções existentes, servem apenas para confirmar a regra.

A natureza é sabia: o homem tem que ser omnivoro, para poder ser sadio e forte.

Uma carne doentia, qual a comida em o Rio de Janeiro e nos centros populosos, pode perfeitamente fazer mal á economia; mas uma carne sadia, qual a que se come no Rio Grande do Sul e no sertão, concorrerá poderosamente, como alli, para a constituição sadia do corpo. É necessario, porem, não exagerar, seja qual for o alimento preferido: a alimentação deve ser sadia, mas sobria.

On peut souffrir de trop manger, jamais d'avoir mangé trop peu. São palavras sobremodo sensatas de um dos mais lucidos espiritos de todos os tempos.

A sobriedade é um dos melhores attributos physicos, como tambem a causa mais poderosa de longevidade.

A creança deve ter varias refeições, mas todas ellas sobrias: café, pão e leite ás seis da manhã; mingão, café, pão, leite e queijo ao almoço; mingão, fructas, queijo á merenda; sopa, carne, farinha, verduras e doces ao jantar; leite e biscoitos á ceia. Essa mania brasileira de almoço de garfo ás primeiras horas do dia, á farta, deve ser de vez abolida dos nossos usos e costumes, si quizermos tomar a serio o fortalecimento da raça.

O homem ainda ingere, inconscientemente sempre, certos corpos gasosos, liquidos e solidos, que lhe enfraquecem extraordinariamente o organismo, amargurando-lhe e apressando-lhe a existencia. Nesse numero estão, para exemplificar, a nicotina e o oxydo de carbono, venenos fortissimos, estupidamente ingeridos por todos os fumantes; a cerveja, o vinho e a aguardente, inconscientemente usados e abusados, ás refeições e fora dellas, pelos amigos vencidos do alcool; as nocivas conservas de todas as especies e matizes, epicuresticamente condimentadas, e que não raro occasionam as mais serias perturbações no aparelho digestivo.

Um homem perfeitamente equilibrado só deve ingerir o que lhe for necessario ao organismo.

O fumar acaso alimenta?

Só um louco seria capaz de responder affirmativamente. E si não alimenta, para que então usar e abusar do fumo? É um vicio, e como tal deve ser banido da educação cuidadosa da mocidade.

Dizem os apaixonados que o fumar não é nocivo. Mas o dito, sobre ser ingenuo, nada tem de verdadeiro: o fumo faz mal á bolsa do individuo; offende a sua perfeita constituição moral, como vicio que é; por fim ataca a robustez physica mais agigantada.

Não ha um fumante de profissão com um estomago ideal, sem dores de cabeça continuas e fortes: porque a nicotina e o oxydo de carbono, ingeridos durante o fumar, levam aos poucos o organismo áquella anormalidade.

Um homem que ingere continuamente coisas que não lhe são necessarias á economia, por força que acaba anormalizando o proprio corpo: não ha fugir á physiologica conclusão. O fumante physicamente é um anormal.

O bello sexo em these dispensa o fumar. Porque não succeder o mesmo com o sexo forte?

Analogas considerações se podem fazer relativamente ao alcool como alimento. A cerveja é nociva, como nocivo é o vinho, a genebra, a aguardente e o whisky. Certo o organismo bem constituído reclama um pouco de alcool: mas este pouco é encontrado de sobejo em certas fructas. Nenhuma necessidade, portanto, de determinadas bebidas alcoolicas, que não raro conduzem espiritos não perfeitamente equilibrados a excessos lamentaveis, á embriaguez e ao crime. Quem bebe sem ter sede, foge á temperança: e esta, no comer e no beber, é sem duvida virtude de valor inextimavel. O menino, para poder se tornar homem forte, precisa de fugir conscientemente aos vapores do fumo e do alcool, assim como aos prazeres e excessos da meza. Comer varias vezes mas pouco de cada uma dellas, sempre mastigando muito bem os alimentos, eis o segredo maximo da saude e da longevidade. A assistencia dentaria escolar é por isso mesmo de extraordinaria validade pratica.

Isso quanto aos alimentos.

Vejam os agora os exercicios necessarios á robustez do corpo.

Ordinariamente usam-se e abusam-se dos exercicios physicos, sem a minima reflexão respeito á sua utilidade. Como em a Europa se joga o foot-ball, e se emprega o patim, pretende-se fazer a mesma coisa no Brasil. Isso, porem, tem um limite. Para as regiões polares, um sport violento, qual o foot-ball, tem a sua razão de ser.

No Brasil, não.

Sem revolta, não se pode comprehender em zona torrida, sol a pino, thermometro a 33° centigrados á sombra, e organismos em formação, esgotando-se em suor, á pratica estúpida do foot-ball. Longe de util, esse é um exercicio de completo esgotamento physico.

Não ha quem resista a um golpe de ar, depois de uma hora de foot-ball em clima quente, sob sol abrasador, quando as vestes se acham completamente humedecidas de suor. O mesmo com a patinação, que se presta para o gelo e não para o nosso clima. E a graça é que os nossos *rinks* só são frequentados no verão. . . .

Urge afastar o menino de tão graves irregularidades.

Quem deseja ser forte de corpo, precisa antes e acima de tudo de dous salutaes exercicios: saber respirar e andar a pé.

Com o primerio adquire-se uma excellente caixa thoraxica, um pulmão forte, uma perfeita circulação portanto. Com o andar a pé fortalecem-se convenientemente os membros, dando força e vigor ao organismo. A respiração deve ser feita pelo nariz. A locomoção deve ser feita directamente pelo individuo, com os seus proprios pés.

Ha outros exercicios auxiliaes, que podem e devem ser praticados. Nesse numero está em primeiro lugar a natação, depois a esgrima, a seguir a equitação e o remo. A gymnastica, ao ar livre, qualquer que ella seja, é um exercicio violento: desenvolve demasiado o physico, com prejuizo não raro do intellecto e do character.

Deve ser abolida na educação racional da mocidade.

Alimentada e exercitada do modo por que ligeiramente indicámos ás linhas precedentes a mocidade será por força sadia de corpo: não precisará de medico nem de pharmacia; não se fatigará com facilidade na pratica feliz da especialidade preferida; usará consciente a temperança no comer e no beber; terá emfim a necessaria actividade nas batalhas da vida a empenhar: será portanto, forte de corpo, capaz de se atirar com vantagem ás mais serias conquistas intellectuales.

Mens sana in corpore sano.

II. EDUCAÇÃO INTELLECTUAL.

Uma disciplina entendida, conserva-se por largo tempo; decorada, perde-se de todo, no emmaranhado scientifico a explorar successivamente. Ego.

Ninguem estuda simplesmente por estudar, com o prazer subalterno de possuir erudição.

No estado actual de cultura e de desenvolvimento dos povos, isso não é mais praticavel nem possivel. Por isso mesmo a educação intellectual deve ser superiormente conduzida, sempre visando dar ao futuro lidador não uma erudição vasta, mas os conhecimentos theoreticos e praticos indispensaveis á sua futura especialidade.

Em quatro grandes e distinctos cyclos pode esse ideal ser realidade.

Leitura e calligraphia, grammatica e arithmetica, palavra falada e palavra escripta são conhecimentos eminentemente propedeuticos, indispensaveis a todos. Elles devem por isso mesmo constituir o primeiro cyclo didactico, que pode ser synthetizado em lingua vernacula e arithmetica, sem duvida os dois conhecimentos mais uteis ao homem.

Depois o segundo cyclo, de disciplinas ainda necessarias a todos: grammatica e arithmetica; rudimentos de geometria e de desenho, de geographia e de historia, de sciencias physicas e de sciencias naturaes, palavra falada e palavra escripta.

A seguir o terceiro cyclo, de capital importancia para aquelles que se destinam a estudos academicos superiores: lingua nacional e linguas estrangeiras, mathematica elemental, geographia e historia, chorographia e historia do paiz, desenho e cosmographia, sciencias physicas e naturaes, e exercicios continuados da palavra falada e da palavra escripta.

Por fim cultura scientifica especial, theorica e technica, de accordo com as preferencias de cada um. O medico estudar não deve o que estuda o engenheiro ou o soldado; do mesmo modo que a cultura juridica tem que se distinguir limpamente da do educador, da do geometra ou da do philosopho.

O primeiro cyclo fornece a educação geralmente tida primaria no Brasil; o segundo, a cultura chamada complementar; e terceiro constitue o curso de humanidades; o ultimo, a educação superior e technica.

O primeiro cyclo, por ser o fundamental, é sem questão o mais interessante e o mais difficil. Pode ser iniciado aos nove annos de idade, no menino, e dois annos antes, nas meninas. Deve ser conduzido de modo a despertar na creança os mais serios attributos intellectuaes—a lucidez de intelligencia, a imaginação, a iniciativa e a memoria.

O segundo cyclo amplia e completa a educação intellectual iniciada no primeiro, com a preocupação elevada de desenvolver aquellas grandes qualidades intellectuaes, que servem de base á verdadeira cultura scientifica e artistica.

O terceiro cyclo apura as qualidades em questão, fornecendo ao estudante os fundamentos necessarios á futura educação scientifica especial. É por isso mesmo de importancia intellectual decisiva.

O quarto cyclo, emfim, é o que fornece a cultura scientifica e technica necessaria ás grandes e futuras luctas intellectuaes.

Em qualquer dos cyclos, maiormente nos dois primeiros, é preciso um cuidado especial, para desenvolver gradativamente a intelligencia sem sobrecarregar demasiado a memoria: o alumno deve ser levado a entender, ao vez de ser forçado a decorar. Uma disciplina entendida, conserva-se por largo tempo; decorada, perde-se de todo, no emmaranhado scientifico a explorar successivamente.

Ha no Brasil uma velha mania, necessariamente portugueza, que convem seja combatida a todo o transe: o estudante, mal conduzido pelos respectivos professores, busca decorar o que não lhe é possível entender. Consequencia inevitavel e fatal: revolta-se contra a cultura intellectual a receber, ao mesmo passo que perde o gosto, antes a vontade de se educar intellectualmente. E si o pai ou tutor o força á educação, elle abusa da memoria, fatiga-se, adocece. Outra não é a explicação da maldita *surmenage*, tão abundante no Brasil. E quando o cansaço intellectual surge, a energia physica começa a desaparecer.

Quando o ensino de uma disciplina é só theorico, o lente pode perder-se em longas e abstractas considerações, que depois quer exigir integralmente ás sabbatinas e exames. E o alumno, intelligente bastante, só vê um caminho honesto para tanto: abusar da memoria. E decora, muitas e muitas vezes sem nada entender dos assumptos explanados em aula.

Sou testemunha ocular dessa grande infelicidade academica.

Si o ensino fosse quanto possível pratico, das theorias apenas se dando o indispensavel, evitava-se na certa tão grande mal: porque, obrigado á pratica dos assumptos explorados, pouco tempo sobraria ao lente para abstractas e quasi sempre inuteis divagações philosophicas.

Para que o ensino puramente abstracto da physica e da chimica, da botanica e da zoologia, sem uma experiencia siquer daquellas duas sciencias ou sem o minimo exame de uma flor ou de um mamifero?

Com um curso quanto possível pratico, duplo o lucro a haurir: o alumno realmente aprende as theses esplanadas, sem as decorar, e foge de vez áquelle maldito exercicio, que lhe fatiga o intellecto e lhe enfraquece o organismo.

Outro serio defeito a corrigir, em uma boa educação intellectual, está no modo um tanto infeliz de se fazerem recordações ou sabbatinas escriptas. A vida na academia deve ser um preparo consciente da vida futura ou independente. Aqui o homem superior, o medico ou o engenheiro, ao se lhe exigir um certo trabalho intellectual, mette-se convencido em sua bibliotheca, compula autores e obras conhecidas, reflecte, esmiuça, compara, por fim architecta convencido a construção desejada. Por que não se fazer a mesma coisa ás academias e escolas?

Ás sabbatinas escriptas, em curso scientifico ou technico, o alumno deve ter direito de consultar á vontade as suas notas e os seus autores predilectos. Assim se pratica na academia de guerra de Berlim, e assim sempre procedi ás minhas aulas na escola militar e aos meus cursos particulares, com extraordinarios resultados praticos. Gosando de semelhante regalia intellectual, não ha alumno que se atreva a decorar, ao envez de entender os diversos assumptos scientificos. O lucro então será espantoso.

Na intellectual educação da mocidade, quando bem dirigida, é preciso desenvolver a lucidez de intelligencia, a imaginação, a iniciativa, a cultura intellectual, o que jamais se conseguirá, como em muitas escolas brasileiras, com o uso e o abuso da memoria exclusivamente. Uma creança não é papagaio, que repete inconsciente o que aprende, em occasiões em que não devia muitas vezes repetir. A memoria é uma excellente qualidade intellectual. Mas é preciso fazer uso della superiormente.

Uma outra questão intellectual mui interessante diz respeito ás licções de coisas, ora ministradas nas escolas á primeira idade. Para que ensinar a um menino, em tenra idade, o fabrico do sabão, do vidro, das velas, do carvão? Essas coisas fazem parte da cultura technica. Devem, portanto, ser aprendidas ás escolas correspondentes, em idade em que ellas podem ser de facto assimiladas. Aos verdes annos, em escolas elementares, é perder tempo e sciencia inutilmente.

As licções de coisas devem ser ministradas realmente aos verdes annos, mas de um modo productivo e acertado. Nada mais proprio, de maior alcance pratico, que reduzir taes licções ás doutrinas scientificas do terceiro cyclo, isto é, do chamado curso de humanidades. Não quero dizer que se ensine ao menino de nove ou dez annos a resolver um triangulo obliquangulo, a conhecer as propriedades particulares do enxofre ou as leis da electrologia ou da physiologia. Quero, sim, adiantar que o espirito infantil, a proporção que se desenvolve intellectualmente, pode ir aprendendo, de ouvido apenas, rudimentos graduados das sciencias a estudar nos annos superiores. A principio algumas sciencias apenas; depois as mesmas em repetição, e mais uma ou duas novas; a seguir a mesma pratica: repetição dos rudimentos ministrados, e elementos de mais uma ou duas, até que ao ultimo anno do segundo cyclo todas as disciplinas scientificas do terceiro cyclo tenham sido cuidadosamente ministradas.

O seguinte programma, que emprego no Gymnasio Spencer, traduz praticamente as ideias externadas:

PROGRAMMA PARA A AULA DE LICÇÕES DE COISAS.

Primeiro anno primario (primeiro cyclo).

Primeiro mez de aula—Desenho linear.

Segundo mez de aula—Geographia.

Terceiro mez de aula—Physica.

Quarto mez de aula—Chimica.

Quinto mez de aula—Botanica e zoologia.

Sexto mez de aula—Grammatica.

Os outros mezes do anno lectivo serão empregados na revisão do curso feito.

Segundo anno primario (primeiro cyclo).

Primeiro mez de aula—Desenho linear.
 Segundo mez de aula—Cosmographia e geographia.
 Terceiro mez de aula—Physica e chimica.
 Quarto mez de aula—Botanica e zoologia.
 Quinto mez de aula—Mineralogia e geologia.
 Sexto mez de aula—Grammatica.¹

Primeiro anno complementar (segundo cyclo).

Primeiro mez de aula—Desenho linear.
 Segundo mez de aula—Cosmographia.
 Terceiro mez de aula—Physica e chimica.
 Quarto mez de aula—Botanica e zoologia.
 Quinto mez de aula—Mineralogia e geologia.
 Sexto mez de aula—Algebra.¹

Segundo anno complementar (segundo cyclo).

Primeiro mez de aula—Geometria pratica.
 Segundo mez de aula—Cosmographia.
 Terceiro mez de aula—Sciencias physicas.
 Quarto mez de aula—Sciencias naturaes.
 Quinto mez de aula—Algebra.
 Sexto mez de aula—Trigonometria.

NOTA.—As mesmas do anno anterior.

Com as precedentes ideias e conceitos é possível fazer da educação intellectual da mocidade um facto consumado: porque assim ter-se-ão desenvolvido e cultivado os mais valiosos attributos intellectuaes, aquelles que podem fazer o homem robusto de espirito como o era já de corpo.

III. EDUCAÇÃO MORAL.

Os erros de grammatica são individuaes: prejudicam apenas a quem os commette; ao passo que as faltas contra a moral podem levar o homem ao assassinio, á guerra civil, ás luctas internacionaes. Estas, portanto, são muito mais graves que aquelles. Ego.

A educação physica procura dar á mocidade uma cultura physica racional, antes a posse das mais notaveis qualidades de corpo: a creança que dispuzer de taes qualidades, terá aos seus serviços intellectuaes e moraes um corpo sadio e forte. A educação intellectual norteia-se de modo analogo: tenta dar ao homem solida cultura da intelligencia, isto é, a posse integral dos grandes predicados intellectuaes. Pois com a educação moral o mesmo rumo deve ser superiormente trilhado: ella deve procurar dar ao futuro cidadão as mais serias virtudes moraes, do amor de gloria á vontade, aquellas que realmente fazem o cidadão util á collectividade.

A educação physica é relativamente facil: todo o homem anda ou procura andar, come ao sentir fome, e busca repousar, quando de tanto sente necessidade. Com a educação intellectual o mesmo facto quasi: todo o pai medianamente esclarecido ou educado, á epoca opportuna, manda o filho á escola, em busca das necessarias quali-

¹ A geographia e a grammatica foram supprimidas, porque constituem disciplinas regulares do curso complementar.

dades intellectuaes apenas. A educação moral, porem, é muito mais difficil: difficil, porque pais e tutores não se acham ainda sufficientemente esclarecidos; difficil ainda, porque ao mestre, em these, costuma faltar a necessaria compostura ethica para o grande emprehender collectivo.

Os vicios devem ser banidos na educação da mocidade. Nenhum preceptor duvida da affirmação. Mas raro aquelle que abandona o fumo, que detesta o alcool, que abomina realmente o jogo. E fumo, jogo e alcool foram e continuam a ser os tres grandes inimigos do corpo na vida collectiva.

O menino é insensivelmente levado para o mal. E como a lei da imitação nelle é muito forte, não ha argumento capaz de o arredar de vez do fumo, quando tem o habito de ver o pai e o proprio preceptor de charuto á bocca.

D'ahi a seria difficuldade do emprehender.

Na educação moral da mocidade ha tres grandes degráos a vencer: o primeiro consiste em esclarecer convenientemente o preceptor; o segundo, bem mais difficil, tem por fim purificar o mestre, para que elle não accuse um só ponto moral fraco; o terceiro, pventura o mais facil, consiste em pôr intelligentemente os professores em actividade.

Nas ideias propedeuticas desta memoria foram já expostas em synthese algumas ideias, repetio ao necessario esclarecimento do preceptor. Nunca esquecer o seguinte e profundo conceito:

Na consciente educação da mocidade as faltas contra a disciplina, a honestidade, a obediencia, a ordem, isto é, as faltas contra a moral, são muito mais graves que os deescuidos de taboada ou que os erros de grammatica: estes prejudicam a creança apenas; aquellas podem ferir de morte a collectividade.

Numa geração onde o amor de gloria, a bravura, a circumspecção, o devotamento, a energia, a firmeza, a grandeza d'alma, a honestidade, a integridade, a justiça, a liberalidade, a modestia, a nobreza, a obstinação, o patriotismo, a resignação, a sinceridade, a tenacidade, a urbanidade e a vontade, religiosamente cultivados, tenham real existencia, a vida collectiva, pacifica e ordeira, poderá ser perfeitamente uma realidade: o homem não mais trará consigo armas prohibidas; as paixões individuaes deapparecerão; o roubo, o assassinio e o estrupo receberão golpe de morte; a guerra internacional, por fim, soffrerá, fortissimo abalo. Então a paz universal poderá se apresentar a olhos argutos e honestos, não como uma utopia, mas como o maximo ideal collectivo de todos os tempos.

Eu sou um soldado, que ama aprofundadamente os militares exercircios, a marcha e a manobra, a equitação e a egrima, não por amor á guerra, que detesto, mas por necessidade collectiva. Habitos de disciplina, de subordinação, de respeito, de ordem são adquiridos com muito mais facilidade sob a vida das armas. Falo por observação e por experiencia. E o exemplo, verdadeiramente admiravel, da Allemenha actual, prova á evidencia que não estou a exagerar.

Os erros de grammatica são individuaes: prejudicam apenas a quem os commette; ao passo que as faltas contra a moral podem levar o homem ao assassinio, á guerra civil, ás lutas internacionaes. Estas, portanto, são muito mais graves que aquelles.

O preceptor pode perfeitamente estar identificado com taes e tão alevantadas ideias: mas d'ahi a exercital-as religiosamente, elle proprio, vai uma seria distancia a transpôr. Em these o mestre, pelo menos no Brasil, oppõe-se a que a creança fume ou beba alcool. Mas, fervoroso adepto do faze o que eu digo e não o que eu faço, não tira o charuto da bocca, e de vez em quando se assenta ao *bar* mais proximo, para melhor saborear um *chopp* ou um *vermouth* gelado.

O verdadeiro educador não tem o direito de semelhante fraqueza moral: e não o tem, porque a lei de imitação é muito forte á primeira idade; porque o menino faz irreflectidamente o que vê fazer, mais por imitação que mesmo por necessidade.

E qual o educador capaz de fazer abstracção completa de todos os seus vícios e fraquezas?

D'ahi a difficuldade muito seria da educação moral.

Mas supponham-se todos os preceptores sufficientemente esclarecidos, e todos elles dotados daquelles altos predicados ethicos, precedentemente citados por ordem alphabetica. Ahi então, com o exemplo que vale ouro, é possível a pratica feliz do ideal sonhado.

Ainda alguns e syntheticos esclarecimentos.

O castigo corporal deve ser de vez abolido: porque o péo humilha, quando a pena deve ser um exemplo, um verdadeiro ensinamento. Educada é força de péo, a creança perverte-se moralmente: tem medo, mas não brio. Á primeira oportunidade, assim conduzida, ella commetterá fatalmente os mais perigosos desatinos. O castigo corporal foi de vez abolido nos quartais; não pode ter existencia nas escolas e collegios.

Moralmente, o primeiro cuidado a observar é dar ao menino que se educa salutaes exemplos de disciplina, de subordinação, de relativa egualdade, de justiça, de ordem, educando-o em sã atmosphera moral. E para tanto nada mais proprio que organizar militarmente o batalhão escolar. Em collegio militarmente organizado, o menino aprende a cumprir o seu dever, a principio obedecendo, e logo depois fazendo-se obedecer pelos que lhe ficam em posição militar inferior. E uma vez entre elles a obediencia systematisada, tudo o mais virá sem trabalho: ter-se-á assim a disciplina, a nitida comprehensão e a fiel execução do dever imposto, o que importa dizer a ordem, e com esta o inicio de uma era de verdadeira e pura transformação moral.

Depois disso, successivas e bem conduzidas prelecções moraes, com o gymnasio em peeo reunido, mas prelecções feitas sempre por preceptores dignos, perfeitamente equilibrados, capazes de se fazer ouvir e imitar, por suas superiores qualidades physicas, intellectuaes e moraes. Taaes prelecções deverão versar exclusivamente sobre os mais notaveis predicados do corpo, do espirito e do character, com esclarecimentos praticos tirados da historia nacional. Assim far-se-á segura a cultura civica da mocidade.

É de toda a conveniencia que nas prelecções em questão se façam ouvir regularmente os alumnos dos cursos mais adiantados.

Ter-se-ão assim dous grandes proveitos: desenvolvimento racional da palavra falada e apuro gradual de nobres qualidades e virtudes. De tanto ouvir falar que o fumo é nocivo, o alumno bem intencionado acaba por odiar esse vicio, que nada encontra de honesto em sua maldicta pratica. De tanto ouvir combater a irregularidade, a fraqueza, o crime, o alumno acaba fatalmente por se dedicar de corpo e alma aos mais elevados requisitos intellectuaes e moraes.

Ainda, porem, não é tudo. Certas penas e recompensas se tornam indispensaveis. O transgressor de ordens deve soffrer justa reprehensão, particular a principio, em plena aula depois, por fim na aula de moral.

E si a reprehensão for insufficiente, deve-se recorrer ao impedimento, e em caso extremo á sala correccional, especie de xadrez militar, onde só devem entrar os reincidentes em grave falta contra a moral.

No Gymnasio Spencer a educação é physica, intellectual e moral. O alumno é tratado paternalmente. Não se faz uso da descompostura e muito menos do castigo corporal. Os estudantes são organizados militarmente, em um batalhão de caçadores. Não ha recreio: o tempo deste é empregado em varios exercicios de infantaria, que têm logar depois de duas horas de trabalho intellectual. Aos sabbados, na Sala Floriano Peixoto,¹ tem logar a aula de moral, para todos os alumnos. Nem o mais

¹ As salas do gymnasio receberam nomes de grandes brasileiros já fallecidos. A Sala Floriano é a maior de todas: comporta folgadamente trescentos e tantos alumnos.

ligeiro rumor é ahí permittido. Ha então seis oradores: trez do curso secundario (3º cyclo), dous do curso complementar (2º cyclo) e o director.

O alumno que fala tem o direito de indicar o representante do seu anno, no sabbado seguinte. Um dos oradores faltando por acaso á solemnidade, é acto continuo reprehendido pelo director, por faltar ao cumprimento honesto de um dever gymnasial—o de educar a palavra falada. Em suas prelecções semanaes busca o director orientar convenientemente os alumnos, de modo que elles cuidem com amor da sua robustez physica, dos seus dotes intellectuaes e, sobretudo, dos seus attributos moraes. Todos os alumnos hoje sustentam a uma voz:

1º—que as qualidades do corpo são postas ás ordens do intellecto, como um e outro aos serviços do character;

2º—que na lucta pela vida a vontade é a qualidade maxima, a qualidade dominante.

As classes são diariamente visitadas pelo director, que costuma arguir constantemente os alumnos, para lhes apreciar o progredir, avaliar a capacidade, dirigir convenientemente a educação.

Cada alumno, no acto da matricula, recebe da secretaria uma caderneta, denominada Caderneta de Matricula e de vida gymnasial, na qual é escripturada, com o possivel rigor, a vida physica, intellectual e moral do estudante. Mensalmente ha ahí um juizo synthetico e franco do director, sobre a individualidade do estudante.

Eis alguns de taes juizos:

Alumno No. 13, Roberto Alexandre Muniz Gregory, juizo de Junho de 1915: “No corpo esadio, no intellecto robusto, no character verdadeiramente agigantado, o Bob, que no Gymnasio tem feito um progresso verdadeiramente notavel, vê diante de si um futuro invejavel, porque brillantissimo.”

Alumno No. X. Y. Z., juizo de Junho de 1915: “Pouco amigo da frequencia, dos uniformes, da disciplina e da ordem. É intelligente, mas não tem vontade. E sem vontade, ninguém é feliz.”

Alumno No. 83, Mario Ferreira Goulart, juizo de Junho de 1915: “Ao Mario Goulart, a quem deveras estimo, não falta uma só qualidade e virtude. No Gymnasio seu progredir é extraordinario, e fora da vida gymnasial elle possui as grandes virtudes moraes, que levam o homem brillantemente ás posições de destaque.”

Alumno No. X. Y. Z., juizo de Fevereiro de 1915: “Pouco amigo do estudo, da disciplina e da ordem. Tem progredido alguma coisa, simplesmente porque é intelligente. Não quer se dedicar com ardor aos livros.”

Alumno No. 255, Octavio Pimentel do Monte, juizo de Agosto de 1914: “Mantenho inalteravel o julgar do mez anterior: vai em franco progredir. É muito intelligente, applicado e nobre. Ha de ser um grande cidadão, utilissimo á Patria: porque tem requisitos physicos, intellectuaes e moraes para tanto.”

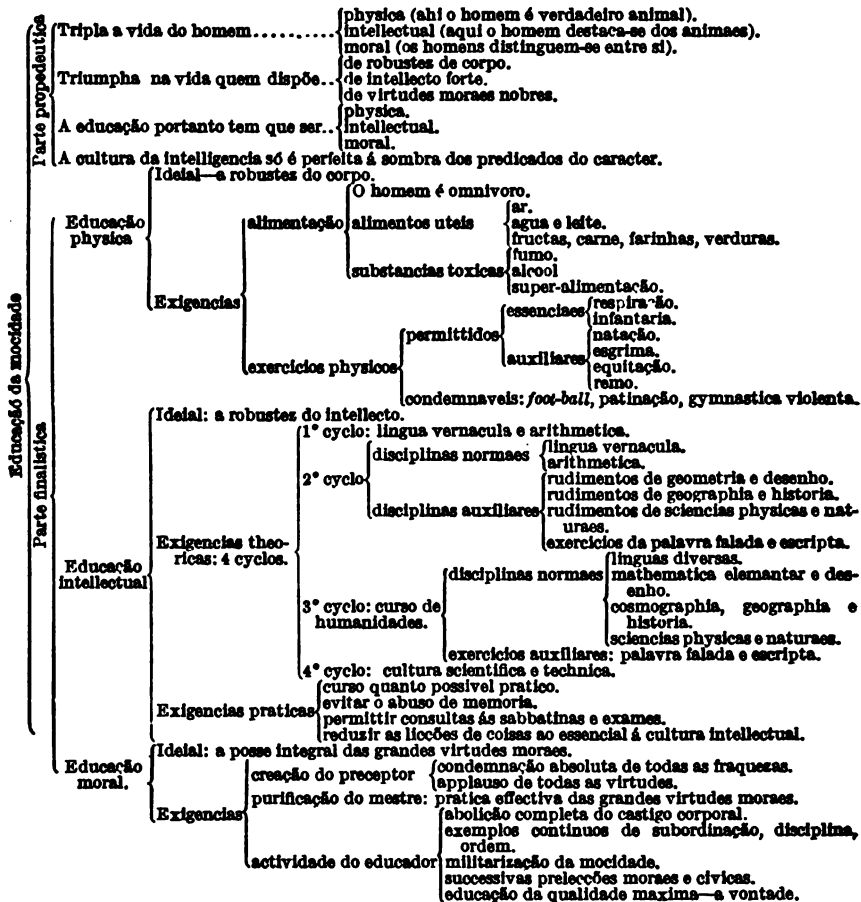
O ensino é realmente obrigatorio: quem tem menos de 3 na prova de frequencia, não pode fazer exame no fim do anno. O maior gráo é 10, a que têm direito os alumnos sem uma só falta em todo o anno lectivo. Gráo 3 é obtido com 20 faltas não justificadas.

O alumno approvado com gráo 10, em todas as aulas do curso que frequenta, ahí deixa a sua photographia, como um nobre incitamento ás turmas que vierem depois d'elle.

Tal, em synthese, o modo por que no Gymnasio Spencer se busca fazer a cultura do futuro cidadão brasileiro.

Assim, comprehende-se, o grande ideal ethico pode ser perfeitamente praticado. E é essa, sem questão, a mais perigosa travessia a transpôr, no mar proceloso da educação consciente dos homens de amanhã.

SYNTHESE DA PRESENTE MEMORIA.



LA ENSEÑANZA DE LAS MATEMÁTICAS GENERALES EN LA UNIVERSIDAD DE LA PLATA.

Por HUGO BROGGI,

Profesor de la Universidad de La Plata, Argentina.

1. Los estudiantes que la facultad recibe en sus aulas provienen de la escuela secundaria (el Colegio Nacional) o de las escuelas especiales (militar, naval, industriales). Pero el mayor contingente lo forman los procedentes de los colegios nacionales, y es la preparación matemática recibida por ellos la que se considera como base de los estudios en la facultad.

Esta preparación (adquirida en los cinco años de que se compone el Colegio Nacional actualmente) comprende la geometría elemental y el álgebra hasta las ecuaciones de segundo grado. Los nuevos planes de los colegios nacionales, que aumentan a

seis los cinco años de estudios de los cuales constan, comprenden además los elementos de la trigonometría.

A los estudiantes de la facultad, que cursan en ella los estudios de ingeniería, de doctorado en física o en matemáticas o en astronomía, se añaden estudiantes de otras facultades de la universidad: de la Facultad del Museo que aspiran al título de doctor en química, de la Facultad de Ciencias de la Educación, la cual los prepara para la enseñanza.

Todos estos estudiantes siguen en la facultad un curso bienal de análisis matemático, en el cual se dicta lo que se considera indispensable que ellos sepan de las matemáticas, sea por el valor que el conocimiento adquirido puede tener en sí y para la formación del espíritu universitario, sea en vista de las aplicaciones o de estudios ulteriores.

2. En la determinación del contenido y del carácter del estudio, de que se trata, se han tenido en cuenta ciertas consideraciones, que tal vez no sea del todo exento de interés recordar acá.

Pareció ante todo inoportuno conservar la tradicional separación de las enseñanzas del cálculo infinitesimal y del álgebra y geometría analítica. La cual resultó determinada por razones de orden histórico y por la tendencia, que los estudios críticos sobre los fundamentos del cálculo acentuaron en la segunda mitad del siglo XIX a construir el edificio del cálculo infinitesimal independientemente de toda consideración de orden geométrico. Lo que tiene científicamente una razón de ser de la cual no podría dudarse. Pero tampoco podrían ponerse en duda las ventajas de orden didáctico que se consiguen, cuando, introducidas las convenciones fundamentales de la geometría analítica y representadas gráficamente funciones, se funde en el estudio de las curvas obtenidas el desarrollo de los conceptos fundamentales del cálculo. Podría decirse que lo que constituye uno de los capítulos—normalmente de los últimos, de los tratados de cálculo—el capítulo concerniente a las aplicaciones del cálculo diferencial a la geometría, se vuelve el capítulo primero y fundamental. Con esta diferencia, el rol recíproco del cálculo y de la geometría resulta parcialmente invertido.

Por otra parte no puede limitarse a esto la intervención de las representaciones gráficas y de las consideraciones, que las conciernen.

Como observa Runge,¹ "el físico" (y lo mismo puede decirse de todo el que tenga que aplicar las matemáticas) "en un gran número de casos tiene que operar con funciones empíricas representable gráficamente con suficiente aproximación, y que conviene representar así. En la mayoría de los casos no podría hablarse, por lo engorroso, de representaciones aproximadas por medio de expresiones analíticas. Cuando estas funciones son objeto de tratación sistemática lo mejor es ejecutar gráficamente todas las operaciones." "Los métodos de integración gráfica de una función cualquiera de una variable real o compleja de ecuaciones diferenciales y de ciertas ecuaciones a las derivadas parciales deberían de considerarse como partes esenciales de un curso de cálculo integral."

3. Pareció análogamente útil, por toda una serie de consideraciones, la aplicación del cálculo a la mecánica desde los comienzos y un desarrollo paralelo de las dos materias.

Ante todo porque las consideraciones de carácter mecánico ofrecen una interpretación concreta de los hechos del cálculo, y ayudan en su comprensión. Considérese un ejemplo. No podría concebirse el movimiento de caída de un cuerpo en el vacío en el cual la velocidad inicial fuera nula y la velocidad de caída proporcional al espacio recorrido. Analíticamente: la ecuación diferencial

$$\frac{dy}{dx} = cy$$

¹ C. Runge, "The mathematical training of the physicist in the university," Proceedings of the Fifth International Congress of Mathematicians. Cambridge, 1913, p. 258.

no tiene un integral nulo para $x=0$ y no idénticamente nulo. Dos integrales iguales para $X=0$ lo son idénticamente. Supóngase $c=1$. Los teoremas que nos dan la derivada de una función compuesta y de un producto nos dicen que, si es

$$y = \lim_{n \rightarrow \infty} \left(1 + \frac{x}{n}\right)^n$$

es también $y = \frac{dy}{dx}$. Así como se ve inmediatamente que

$$y = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \dots = \frac{dy}{dx}$$

Es pues independientemente de la fórmula del binomio

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \dots$$

Supóngase $c = \sqrt{-1} = i$. Es

$$\frac{de^{ix}}{dx} = ie^{ix}, \quad \frac{d(\cos x + i \sin x)}{dx} = i(\cos x + i \sin x).$$

Vale pues también la fórmula de Euler

$$e^{ix} = \cos x + i \sin x$$

mientras la parte imaginaria del desarrollo en serie de e^x para $x = ix$ nos da el desarrollo en serie de $\sin x$, la parte real el de $\cos x$.

Es, pues, toda una serie de hechos analíticos fundamentales que fluye de la consideración tan sencilla que permitía a Galileo excluir la posibilidad de un movimiento de la naturaleza del indicado.

No es ésta, tal vez, la principal ventaja de la fusión propuesta.

Fusión que es sobre todo útil en cuanto, mientras permite proponer a los estudiantes aplicaciones que no son los complicados problemas de las colecciones de los ejercicios de cálculo sino problemas sacados de las materias que de más cerca les interesarán en los estudios ulteriores y en su actividad práctica, los familiariza paulatinamente con los principios de la mecánica, los acostumbra a aplicarlos a casos concretos y crea en ellos un "estado de ánimo," cuyo valor no podría suficientemente ensalzarse. La convicción se impone que las matemáticas son efectivamente un instrumento de trabajo y no sencillamente un jardín murallas muy altas lo separan del mundo de las realidades y en el cual, para consuelo de muy pocos y aburrimiento de muchos se cultivan flores inútiles y raras.

Es sobre todo la teoría de las ecuaciones diferenciales que resulta así influenciada. La mecánica nos conduce a buscar los integrales, o expresiones que representan una aproximación prácticamente suficiente de los mismos, que satisfacen a ciertas condiciones iniciales, y por otra parte todo problema dinámico encuentra su formulación analítica en ecuaciones diferenciales.

Más bien que como una teoría aparte en la cual se estudian ciertos tipos de ecuaciones, los integrales de las cuales pueden ser determinados por medio de artificios, generalmente de carácter particular, y bajo una forma que aun siendo analíticamente sencilla puede no serlo para el cálculo numérico y para la determinación efectiva de valor de las constantes que aparecen en ellos y que satisfacen a las condiciones del problema, la integración de las ecuaciones diferenciales aparece desde los comienzos como el problema central del cálculo, problema que interesa resolver con métodos, en lo posible, generales y cuyo empleo determine un mínimo de trabajo efectivo.

Esto por lo que concierne más propiamente al cálculo. Por lo que concierne a la geometría, son consideraciones de orden mecánico las que más naturalmente nos conducen a generalizar los métodos de la geometría analítica con la introducción del concepto de vector y de las operaciones del cálculo vectorial. En la interpretación mecánica inmediata de que todas estas operaciones son susceptibles, encuentran ellas su razón de ser y su aplicación más natural.

4. Faltan en el curso sea las nociones de carácter algebraico que no encuentran su aplicación en las teorías geométricas estudiadas o no se resuelvan en problemas de cálculo gráfico y numérico (sistemas de ecuaciones lineales, resolución numérica de ecuaciones) o del cálculo (elementos de la teoría de las series, nociones de cálculo de las diferencias finitas). Falta, sobre todo, toda preocupación de carácter lógico concerniente al examen crítico de los fundamentos del cálculo y asimismo la aspiración a un estudio completo en todas sus partes de las teorías expuestas.

A la posible observación de que un curso de la naturaleza del indicado podría no ser la introducción más apropiada para aquellos entre los estudiantes (de astronomía física y matemática) llamados más adelante a completar y a profundizar sus conocimientos matemáticos se contesta que para todos, y por lo tanto también para los estudiantes de matemáticas, lo esencial es ante todo darse cuenta del poder del cálculo y acostumbrarse a usarlo.

El examen crítico sutil y completo de las nociones, y el desarrollo detallado de las teorías, lejos de contribuir a la plenitud de su comprensión, puede seriamente dificultarlo.

5. El curso general se desarrolla en seis horas semanales, de las cuales dos son de clase y cuatro de ejercitaciones, en lo posible individuales, y se complementa, para los estudiantes de la facultad, con un curso de "aplicaciones de álgebra y de trigonometría" (en primer año) destinado a volver sobre las matemáticas de la escuela, un curso de geometría elemental y proyectiva (en primer año) y descriptiva (en segundo).

GEOMETRÍA.

Asignatura de primer año. Para todas las carreras de la Facultad: dos horas teóricas y cuatro prácticas semanales de clase.

PARTE TEÓRICA.

Geometría.—1. Polígonos regulares. Determinación del valor de π por el método de los perímetros y por el de los isoperímetros.

2. Diferencia entre un arco de círculo y su cuerda. Máximos y mínimos de figuras planas.

3. Homotecia. Polo doble de dos figuras semejantes. Potencia de un punto con relación a un círculo. Ejes radicales. Puntos antihomólogos de dos círculos.

4. Propiedades generales de los poliedros convexos. Teorema de Euler. Poliedros regulares de especie superior.

Geometría proyectiva.—5. Elementos y notación de ellos. Principios de dualidad en el plano, en la radiación, en el espacio. Teoremas fundamentales del plano, de la radiación y del espacio.

6. Proyectividad de las formas fundamentales de primera especie. Formas rónicas.

7. Relaciones métricas de las formas fundamentales de primera especie proyectivas.

8. Homología plana. Homología en la radiación. Homología en el espacio.

9. Las cónicas como figuras homológicas de la circunferencia. Teoremas de Pascal y de Brianchon. Aplicaciones de estos teoremas.

10. Teoría de los polos y polares. Centro, diámetro y ejes de las cónicas.

11. Formas elementales de segundo orden y clase de la radiación y del espacio. Conos y cilindros. Serie reglada. Formas resultantes de la proyectividad de las formas fundamentales de primera especie.

12. Involución de las formas fundamentales de primera especie. Relaciones métricas de la involución. Propiedades de las cónicas en relación con la involución. Focos de las cónicas.

13. Determinación de los elementos unidos en las formas proyectivas superpuestas de primera especie. Formas fundamentales de segunda especie proyectivas y recípro-

cas. Teorema fundamental referente a proyectividad de dos formas de segunda especie, o a reciprocidad de las mismas. Elementos unidos de las formas fundamentales de segunda especie, proyectivas. Formas de involución.

PARTE PRÁCTICA.

Geometría.—1. Problemas sobre construcción de triángulos, dando tres elementos cualesquiera, como: dos medianas y un lado; dos lados y una mediana; dos lados y una bisectriz; dos medianas y una bisectriz; dos bisectrices y una mediana; dos alturas y una bisectriz; una mediana, una altura y una bisectriz; las tres medianas; las tres alturas, etc.

2. Problemas sobre áreas de diversas figuras.

Geometría proyectiva.—3. Construcción gráfica de los teoremas fundamentales del plano, de la radiación y del espacio.

4. Construcción de las cónicas como figuras homológicas de la circunferencia.

5. Construcciones diversas de las involuciones de puntos.

El profesor indicará oportunamente en clase el número de trabajos indispensables, forma y fecha en que se entregarán.

32. GEOMETRÍA DESCRIPTIVA.

Asignatura de segundo año. Para todas las carreras de la Facultad: dos horas teóricas y cuatro prácticas semanales de clase.

PARTE TEÓRICA.

Proyección de Monge.—1. Representación de puntos, rectas y planos en sus diversas posiciones. Elementos cuyas proyecciones coinciden. Eje de afinidad.

2. Resolución de los principales problemas de posición. Representación de las formas fundamentales de primera especie y de las de segunda especie.

3. Resolución de los principales problemas de magnitud. Rebatimiento de una forma plana sobre uno cualquiera de los planos de proyección.

4. Representación de las formas elementales del plano y de la radiación: puntual; haz de rayos; haz de planos. Cónica y sus proyecciones, etc. Cono y cilindro cuádricos. Resolución de los principales problemas relativos a ellos.

5. Poliedros regulares, representados por el método de Monge. Sección plana de un poliedro. Intersección de poliedros. Resolución del ángulo triedro.

Proyección central.—6. Centros y eje de perspectiva. Cuadro, rectas límites, línea de fuga, etc. Principales problemas de posición.

7. Proyección ortogonal de una figura sobre el cuadro. Proyección ortogonal sobre un plano perpendicular al cuadro. Proyección ortogonal sobre un plano cualquiera. Triedro trirectángulo.

8. Problemas de magnitud, en distancia y angulares, en los diversos casos que puedan presentarse. Rebatimiento de un sistema plano.

9. Representación de las formas elementales del plano y de la radiación: puntual; haz de rayos; haz de planos. Cónica y su imagen, etc.

10. Cono y cilindro cuádricos. Diversos problemas relativos a conos y cilindros.

Proyección axonométrica.—11. Triedro fundamental; ejes axonométricos; triángulo de las trazas. Representación de puntos, rectas y planos. Resolución de los principales problemas de posición y magnitud. Rebatimiento de un sistema plano sobre el cuadro.

Representación de una forma plana o de un poliedro, dadas sus proyecciones por el método de Monge.

Perspectiva y sombras.—12. Perspectiva: Definiciones. Puntos de vista y distancia; rectas de fuga. Representación de puntos y rectas; de un círculo o un polígono que estén en el plano horizontal o en un plano paralelo a él. Nociones sobre representación de poliedros y superficies curvas.

13. Sombras: Sombra de un punto en los tres métodos de proyección tratados. Sombra de una recta sobre un plano cuando el foco luminoso es un punto a distancia fija o a distancia infinita. Sombras propias de los poliedros sobre los planos de proyección o sobre otros poliedros. Nociones de líneas isóftas y de sombras sobre superficies curvas, en los tres sistemas de proyección tratados.

PARTE PRÁCTICA.

Proyección de Monge.—1. Dibujo de los principales problemas de posición y de magnitud.

2. Proyecciones de conos y cilindros, y secciones planas de unos y otros.

3. Proyecciones de poliedros regulares.

Proyección central.—4. Dibujo de los principales problemas de posición.

5. Dibujo de los principales problemas de magnitud.

6. Representación de conos y cilindros, secciones planas de unos y otros.

El profesor indicará oportunamente en clase el número de trabajos indispensables, forma y fecha en que se entregarán.

APLICACIONES DE TRIGONOMETRÍA Y ÁLGEBRA.

Asignatura de primer año. Para todas las carreras de la Facultad: dos horas teóricas y cuatro prácticas semanales de clase.

PARTE TEÓRICA.

1. Funciones goniométricas. Variación de las funciones goniométricas. Relaciones entre las funciones que satisfacen a condiciones particulares dadas. Funciones inversas. Relaciones entre funciones de un mismo arco.

2. Teoría de las proyecciones. Proyecciones oblicuas y ortogonales.

3. Operaciones inversas con funciones goniométricas.

4. Tablas trigonométricas. Principios sobre los cuales se basa la construcción de tablas. Su disposición y uso.

5. Ecuaciones trigonométricas. Transformación de expresiones algebraicas por el empleo de ángulos auxiliares. Resolución de ecuaciones trigonométricas.

6. Resolución de triángulos. Relaciones entre los elementos del triángulo. Resolución de triángulos. Forma trigonométrica y representación geométrica de cantidades imaginarias. Fórmula de Moivre y sus aplicaciones a las funciones goniométricas.

7. Geometría de la esfera. Cálculo del exceso esférico. Fórmulas principales de la trigonometría esférica.

8. Análisis combinatorio. Fórmulas generales de combinaciones repetidas.

9. Teoría del interés. Interés continuo. Fórmulas de correlación entre las tasas reales y las tasas nominales.

10. El interés en sentido negativo. Generalidad de la función de interés. Tasa de descuento nominal y real. Relaciones entre la tasa de descuento y la de interés.

11. Anualidades constantes. Interpretación de la fórmula general. Valores adquiridos y actuales. Anualidades diferidas y perpetuas. Valores aproximados de una anualidad fraccionada. Valor de la anualidad continua en función de la anualidad anual. Fórmula de Bailly y determinación de la tasa del interés.

12. Nociones sobre cálculo de probabilidades y aplicaciones elementales a los seguros.

PARTE PRÁCTICA.

Problemas analíticos y gráficos referentes a los temas contenidos en la teoría, en especial de la trigonometría. Cálculos algebraicos. Cálculo mecánico.

El profesor indicará oportunamente en clase el número de trabajos indispensables, forma y fecha en que se entregarán.

ANÁLISIS MATEMÁTICO, PRIMER CURSO.

Asignatura de primer año. Para todas las carreras de la Facultad y doctor en química de correlación dos horas teóricas y cuatro prácticas semanales de clase.

PARTE TEÓRICA.

1. Ecuaciones de primer grado. El principio de permanencia y los números racionales. Representación gráfica de expresiones lineales. La geometría analítica de la recta en el plano.

2. Ecuaciones de segundo grado. El concepto de límite y la teoría de los números irracionales. Números complejos. Representación de Gauss. Operaciones; números complejos.

3. Vectores. Suma y productos de vectores. Aplicación a la geometría de la recta y del plano. Ecuaciones vectoriales y cartesianas de las cónicas y estudio de estas curvas. Sistemas de ecuaciones. Baricentros. Elementos de la teoría de los determinantes.

4. Concepto de función. Representaciones de funciones empíricas. Diferencias finitas y sumas. Fórmulas interpolatorias de Newton y de Lagrange.

5. El integral definido como medida de una superficie. Fórmulas aproximadas de cuadraturas.

6. Derivadas. Velocidad y aceleración. Teoremas fundamentales. Derivadas de las funciones elementales. Binomio de Newton. Condiciones necesarias de máximo y mínimo de una función. Concavidad y convexidad de una curva. Puntos de inflexión. Geometría diferencial de las curvas planas.

7. El integral definido como función de los límites. El integral indefinido. Métodos de integración. Rectificación de curvas planas. Cuadraturas.

8. Series: de convergencia, de Taylor. Condiciones suficientes de máximo y mínimo. Derivación e integración de series.

9. Funciones de más variables. Derivación parcial. Condiciones necesarias de máximos y de mínimos. El método de los cuadrados mínimos. Aplicaciones.

10. Las cuádricas. Geometría analítica de las cuádricas.

PARTE PRÁCTICA.

1. Ejercicios referentes a representación de funciones. Líneas en el plano.

2. Derivadas de funciones elementales algebraicas y transcendentales.

3. Derivadas de funciones inversas y compuestas.

4. Ejercicios sobre variación de funciones: máximos y mínimos, concavidad y convexidad, puntos de inflexión.

5. Trazado de curvas. Raíces de las ecuaciones. Resolución gráfica de ecuaciones. Métodos aproximados para determinar las raíces de una ecuación.

6. Suma de series. Cálculo de errores. Interpolación y extrapolación.

7. Aplicaciones analíticas y geométricas de las fórmulas de Taylor y de MacLaurin.

8. Problemas elementales referentes a la geometría analítica en el plano y en el espacio.

El profesor indicará oportunamente en clase el número de trabajos indispensables, forma y fecha en que se entregarán.

ANÁLISIS MATEMÁTICO, SEGUNDO CURSO.

Asignatura de segundo año. Para todas las carreras de la Facultad: dos horas teóricas y cuatro prácticas semanales de clase.

PARTE TEÓRICA.

1. Inversión de funciones. Las funciones ciclotómicas. Funciones implícitas.

2. Teoremas sobre integrales y métodos de integración. Integrales dobles y triples. Determinación de superficies, de volúmenes y de momentos de inercia. Teorema de Guldin.

3. Derivación de vectores respecto a un escalar. Aplicaciones a la geometría diferencial de las curvas gauzas y de las superficies. Ecuaciones de superficies. Coordenadas curvilíneas.

Aplicaciones a la cinemática de un punto. Integración de vectores respecto a un escalar. Movimientos centrales y oscilatorios. Elementos de la cinemática y de la dinámica de un cuerpo rígido.

4. Integrales curvilíneas. Trabajos integrales de superficie. Primeros elementos de la teoría del potencial.

5. Ecuaciones diferenciales. Consideraciones y definiciones fundamentales. Ecuaciones diferenciales lineales de primer orden. Ecuaciones de primer orden no lineales. El factor integrante. Ecuaciones diferenciales lineales. Integración por series y numérica de ecuaciones diferenciales y a las diferencias parciales. Integración de ecuaciones diferenciales que se presentan en la mecánica y en la física. Las ecuaciones diferenciales lineales de segundo orden y las series de funciones ortogonales.

PARTE PRÁCTICA.

Problemas analíticos y gráficos referentes a los temas contenidos en la parte teórica.

El profesor indicará oportunamente en clase el número de trabajos indispensables, forma y fecha en que se entregarán.

**LA ENSEÑANZA DE LAS MATEMÁTICAS EN LAS ESCUELAS PÚBLICAS.—
¿CUÁL ES EL MEJOR SISTEMA PARA LA ENSEÑANZA DE LAS MATEMÁTICAS?**

Por RODOLFO MUÑOZ ORIBE,

Profesor de Geometría en la Universidad de Montevideo, Uruguay.

La enseñanza de las matemáticas en las escuelas públicas comprende dos grandes ciclos: (1) La iniciación matemática; (2) los estudios secundarios (altas escuelas).

Es evidente que el sistema de enseñanza de las matemáticas debe variar de uno a otro ciclo, pero esta variación debe ser lenta, pausada, sin saltos bruscos, de modo que el alumno pase de un sistema a otro sin sufrir las consecuencias que podría traer un cambio de método.

Se tratará de utilizar en cualquier etapa de la enseñanza los conocimientos adquiridos en los años anteriores. Así en la iniciación matemática debe de intervenir únicamente la comprobación. Debe procederse de tal modo que el niño llegue a admitir como evidente y general los principios matemáticos que se le inculcan, haciéndole ver con la comprobación continua la producción de un fenómeno. El cerebro del niño no está aún preparado para la demostración matemática, y llega fácilmente a admitir como cierto todo aquello que le enseñamos. La iniciación matemática debe evidentemente empezar por el dibujo; la construcción de palotes verticales primero y después horizontales le dará la noción de línea recta. Es a esta altura que el niño se encuentra en condiciones de aprender los números. Dice Laisant en su folleto titulado "Iniciación Matemática:"

Quando se adquiere el hábito de trazar rápidamente y con regularidad los bastones o palotes, se enseñará a contarlos a medida que se les dibuje, pronunciando las palabras uno, dos, tres, cuatro, cinco, seis, siete, ocho, nueve, diez, sucesivamente. En seguida, se formarán grupos de bastones, separados por intervalos, y se tendrán imágenes que se leerán:



Figura 1.

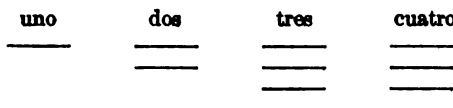


Figura 2.

Uno, dos, . . . diez bastones verticales, para la figura 1; uno, dos, . . . diez bastones horizontales, para la figura 2. Luego se colocarán sobre las figuras grupos de granos de trigo, de frijoles, de fichas u otros objetos cualesquiera, diciendo: uno, dos, . . . diez granos de trigo, frijoles, etc. Se supondrá después que los objetos son reemplazados por ovejas, perros, hombres, etc., y estos ejercicios suficientemente repetidos, hechos familiares al niño, se podrá decir entonces que las expresiones de que hace uso: tres bastones, seis granos de trigo, ocho ovejas, por ejemplo, serán números y números concretos. Habiendo considerado en grupo de cinco bastones, otro de cinco frijoles y otro de cinco fichas, e imaginándose uno de cinco perros o de cinco árboles, se le hará notar al niño, que en estos diversos casos, pronuncia siempre la misma palabra, cinco; se le dirá que esta palabra, sin añadirle nada, representa lo que se llama un número abstracto, y que podrá servirse de ella para designar cualquier grupo de cinco objetos: años, cadenas, casas, etc. No pasará mucho tiempo sin que el chiquitín sepa contar sin dificultad de uno a diez cualquier clase de objetos. Será bueno habituarlo a distinguir rápidamente con la mirada cualquier grupo de objetos que se le presenten súbitamente, sin necesidad de contarlos uno a uno, fichas o frijoles, por ejemplo; para esto será necesario comenzar por grupos pequeños, y proceder progresivamente.

Tengo bien presente la forma como fué iniciado en el estudio de las matemáticas. Fué mi primer maestro uno de esos sabios ignorados, que dedica su vida con verdadero cariño a la enseñanza. Aquél hombre de bien, que se propuso sacarme de la ignorancia, me inició en las matemáticas utilizando papelitos de colores en tal forma y con tanto provecho que llegué prácticamente y en poco tiempo no sólo a conocer la numeración, sino también a efectuar con bastante corrección las dos primeras operaciones fundamentales de la aritmética; suma y resta. Fué a esta altura cuando me enseñó los guarismos que representan los números, los que aprendí con toda facilidad, dado que ya conocía no sólo los fundamentos de la aritmética sino que sabía manejar con facilidad el lápiz, encontrándome bastante preparado en dibujo. Sabía en efecto, dibujar palotes en cualquier dirección y hasta construir las primeras figuras geométricas

Contaré una anécdota que podrá ser de provecho, por cuanto indica un medio útil para calmar la impaciencia de un niño.

Mi deseo de adquirir conocimientos me llevaba a reclamar de mi maestro una modificación en el método de la enseñanza, considerando en medio de mi ignorancia, deficiente el método de aquél sabio y pidiéndole con insistencia y diariamente que me indicara los libros en que debía efectuar mis estudios. Por toda respuesta aquél buen hombre me compró una geometría de Guilmin y abriendo el libro al acaso dió con el teorema de las relaciones métricas que determina el cuadrado del lado opuesto a un ángulo agudo en un triángulo oblicuángulo, y me hizo estudiar de memoria el enunciado del teorema. Calmó así mi impaciencia, pero no fué más que momentáneamente, bien pronto abandonaba yo aquél maestro para iniciarme en los estudios universitarios. La labor de aquél hombre fué tan fecunda que me permitió en un año dar examen de ingreso en la Universidad, obteniendo la más alta clasificación.

LAS NOCIONES DE ÁLGEBRA.

No nos cansaremos de recomendar a todo educador, que tenga bien presente, y aun le sirva de guía, la "Iniciación Matemática" de Laisant. Esta obra magistral nos ha inspirado a escribir estas líneas y no tenemos escrúpulos en copiar íntegramente aquellas partes que están en un todo con nuestro modo de pensar. Es así que transcribimos los siguientes párrafos:

Hasta ahora hemos aprendido a obtener sumas o adiciones, y subtracciones o diferencias. Por ejemplo, la suma de 8, 5 y 14 es 27. Hay un signo +, que representa la adición y que se enuncia "más," y también un símbolo = que se enuncia "igual a." De manera que la operación que acabamos de indicar podrá escribirse:

$$8+5+14=27$$

que se leerá: 8 más 5 más 14 igual a 27.

Para indicar la sustracción se emplea el signo $-$, que se lee "menos," y se escribe:

$$7-5=2$$

y se lee: 7 menos 5 igual a 2, lo que quiere decir que quitando 5 de 7, la diferencia es 2.

Todas las operaciones de esta naturaleza podrán efectuarse con varillas o segmentos, como lo hemos visto ya. Así observando la figura 3 podemos decir que significa:

$$5+3+4=12$$

que puede escribirse también:

$$OA+AB+BC=OC.$$

La figura 4 significa:

$$11-4=7$$

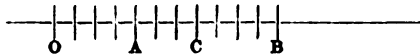


Figura 3.

y se puede divertir al niño haciéndolo traducir todas las operaciones que se quiere bajo sus diversas formas. Se comprende que en lugar de 8, 5, 14 o de 5, 3, 4 en los ejemplos citados, puede ponerse cualquier número; llamándolos a, b, c, se escribiría $a+b+c=s$, que representaría siempre la suma de tres números, la cual sería 27 en el primer ejemplo y 12 en el último.

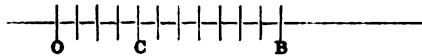


Figura 4.

Del mismo modo, $a-b=r$ indica que la diferencia que se obtiene quitando "b" de "a" es igual a "r." Por ejemplo en la figura 4, $a=11$, $b=4$, y $r=7$.

Es a menudo muy cómodo indicar las operaciones con signos y los números con letras. Es bueno acostumbrarse a ello desde luego, porque servirá muchísimo en lo porvenir y evitará grandes trabajos.

Es preciso saber lo que significa:

$$()+()\div()-()$$

cuando se escribe algo en el interior de los paréntesis.

Sencillamente quiere decir que, cada expresión comprendida entre paréntesis, debe ser reemplazada por su resultado. Por ejemplo:

$$(a-b)-(c-d)+(e-f)=7,$$

$$\text{si, } a=10, b=2, c=9, d=6, e=7, f=5$$

se transformará en

$$(10-2)-(9-6)+(7-5)$$

o bien:

$$8-3+2=7.$$

Estas anotaciones se llaman a veces algebraicas. Pero las palabras tienen menos importancia que las cosas.

Y lo que seguirá nos mostrará cosas nuevas.

Agregar números es cosa fácil para nosotros. Si tenemos varios montones de frijol, podemos reunirlos en un solo montón. En otros términos, la adición es siempre posible, y podemos traducirla por cifras, fichas, bastoncitos, segmentos de recta, como nos plazca.

Pero no es lo mismo en lo referente a la sustracción: si de 7 fichas quiero quitar 10, la operación es del todo imposible, como ya lo hemos hecho notar. Sin embargo, si recordamos lo dicho anteriormente, y que manifiesta la Figura 3, se necesitaría para verificar la sustracción por medio de varillas, o por medio de segmentos de recta, llevar sobre una recta un segmento OB de 7 bastoncitos de longitud, y después llevar en sentido contrario, es decir, de derecha a izquierda, un segmento cuya longitud sea la del número que deseamos restar; pero esto es imposible, suponiendo que el número que se desee restar sea 10; obtendremos así la longitud BC igual a 10 bastoncitos hasta el punto C, y tendremos por resta el segmento OC; pero el punto C no queda a la derecha del punto O, sino a su izquierda; el segmento OC se dirige de derecha a izquierda y es igual a 3.

Un número tal se llama negativo; se escribe -3 y se lee "menos 3," y se podrá escribir así la operación:

$$7-10=-3$$

La creación de los números negativos hace, pues, posibles todas las subtracciones que no lo eran con los números ordinarios, los cuales se llaman, por oposición, números positivos.

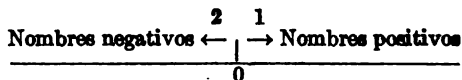


Figura 5

En la figura 5, toda la porción situada a la derecha del punto O (flecha 1) representa el dominio de la Aritmética o de los números positivos; la porción de la izquierda (flecha 2) representa el dominio de los números negativos; y el conjunto de las dos flechas, la línea recta entera, en los dos sentidos, representa el dominio del álgebra.

Es preciso, pues, cuando queramos representar números con varillas o segmentos, indicar el sentido de estos segmentos, o el signo del número;

Esto nos obliga, para no equivocarnos, a considerar en los extremos de un segmento, lo que llamaremos su origen y su fin, y el sentido del segmento será siempre el que va del origen hacia el fin. Al escribir el segmento AB, significa que A es el origen y B el fin. Esto nos obliga a modificar un poco nuestra proyección de bastoncitos, lo que haremos fácilmente, ennegreciendo ligeramente la extremidad de los bastoncitos con tinta de china, para con énfasis en que el extremo negro represente siempre el fin. De manera que colocando 3 bastoncitos en fila y con la extremidad negra hacia la derecha, representaremos el número $+3$; y colocando dos bastoncitos con la extremidad negra hacia la izquierda se indicará el número -2 , y así sucesivamente. Para añadir segmentos, deberá expresarse siempre el sentido de dicho segmentos. Por ejemplo, para agregar 11 y -4 , se tomará un segmento OB, de izquierda a derecha e igual a 11 en longitud, y en seguida, un segmento BC dirigido de derecha a izquierda e igual a 4 en longitud.

Ahora Lien (fig. 4), fué justamente lo que hicimos para obtener la diferencia $11-4$. Puede escribirse así:

$$11+(-4)=11-4=7,$$

y las subtracciones se transforman en sumas.

Los ejercicios con los números negativos pueden variarse hasta el infinito y serán siempre fáciles empleando los bastoncitos ennegrecidos en su extremidad. Podrán formarse además varillas de longitud igual a la de varios bastoncitos, ennegreciendo igualmente su extremidad para distinguir su origen y su fin. Pronto se familiarizarán los niños con esta noción tan simple y tan necesaria, del signo o del sentido de los números.

Por otra parte, si los números negativos sorprenden a veces desde luego, basta reflexionar un poco para encontrar su explicación muy natural. Se dice que un número no puede ser más pequeño que nada, es decir que cero. Sin embargo en el lenguaje usual decimos todos los días que el termómetro ha indicado tantos grados bajo cero. Cuando queremos indicar la altura de un punto sobre el nivel del mar, fácilmente comprendemos que si el punto se encuentra en el fondo del mar, estará abajo de su nivel. Si partiendo de un lugar deseo encontrar el camino que recorro en determinada dirección, y marchó en dirección opuesta, es claro que no podría emplear el mismo número para representar dos cosas contrarias. Un hombre sin fortuna, pero que nada debe, no es rico ciertamente; pero, si, desprovisto de fortuna, ha contraído deudas, puede decirse que este individuo tiene menos que nada o que su fortuna es negativa. Un corcho posee cierto peso y cae si se le abandona en el aire, abandonado dentro del agua viene a flotar a la superficie del líquido; aparentemente, su peso es negativo en este caso. En resumen, los números negativos, lejos de tener un carácter misterioso, se adaptan, del modo más natural, a todas las cantidades y no falta ciertamente más que por su esencia misma permitan dos modos opuestos: calor y frío, arriba y abajo, crédito y débito, porvenir y pasado, etc. Con ejemplos concretos, se podrá hacer penetrar estas nociones tan simples, en el cerebro de los niños, porque son realmente infantiles esos ejemplos. Los niños se interesarán si no cesáis de mezclar en las explicaciones, manipulaciones con bastoncitos y varillas; y esto servirá más para la formación de su espíritu que la monótona recitación de reglas y definiciones incomprensibles.

Aun no han practicado más que las dos reglas de la Aritmética, adición y sustracción; apenas saben escribir, y helos aquí lanzados, como vos mismo, en las regiones del álgebra. Si el temor invade los ánimos, decid luego, que esta ciencia tan útil y tan bella es relativamente moderna, y que a Francisco Viete cabe la gloria de haberla inventado.

La introducción de estas breves nociones de álgebra en la primera educación será un poderoso auxiliar para la clara comprensión de las operaciones a efectuarse con las expresiones matemáticas deducidas ya sea del enunciado de un problema, ya del desarrollo combinado de operaciones aritméticas. El maestro contará con el paréntesis y las nociones de cantidades positivas y negativas un medio fácil para despertar la intuición del orden en las operaciones fundamentales y en la disposición de los cálculos combinados.

Hace apenas cuatro años que en un folleto que publicamos sobre la enseñanza de las matemáticas decíamos:

En la enseñanza de la aritmética no vemos el inconveniente en avanzar un poco en los dominios del álgebra, destruyendo así los escrúpulos mal entendidos de los que pretenden definir claramente los límites entre estas dos ramas de las matemáticas, pues no hay que olvidar que ellas se compenetran. Hemos visto así, con pena, enseñar en nuestra instrucción primaria errores como éste:

$$2+3 \times 4 = 5 \times 4 = 20.$$

Habiéndosele preguntado a una distinguida maestra la causa, manifestó que los alumnos no conocían el paréntesis, y siendo necesario enseñarles la operación $(2+3) \times 4$, se había adoptado el procedimiento expuesto. Grave error que hace adquirir un falso concepto en los primeros años, en la niñez, en la edad que se admite, en medio de la inconsciencia, lo que nos dicen que es bueno: en la edad por lo tanto, en que las ideas toman la fuerza de una afirmación, en tal forma que la labor del razonamiento tiene que ser fecunda, para destruirlas con el tiempo.

Para corregir estas deficiencias de la enseñanza, ha sido necesario el esfuerzo de los tribunales examinadores, de los Inspectores de Instrucción Primaria, y sobre todo la fecunda y asidua labor de un núcleo de maestros y maestras que honran al magisterio nacional. Es preferible, no enseñar un principio a enseñarlo mal.

Se debe obligar al niño a que tenga muy en cuenta el orden en las combinaciones de operaciones aritméticas. Así por ejemplo, supongamos que se haya establecido esta igualdad

$$4+8=12$$

y se pide multiplicar el número 12 por 3, la primera intención del niño es escribir:

$$4+8=12 \times 3=36.$$

La noción de uno de los axiomas más conocidos en matemáticas, por su frecuente aplicación, "dos cosas iguales a una tercera son iguales entre sí," no presenta en la iniciación matemática mayor dificultad, el niño la aprende fácilmente, y la intuición la graba de una manera firme en su cerebro.

Con las series de igualdades anteriores y teniendo en cuenta el axioma enunciado, el mismo niño deducirá, con una pequeña observación del maestro, el siguiente absurdo:

$$4+8=36$$

Y se dará así cuenta que tiene que establecer para cada operación independiente de la anterior, una nueva igualdad

$$4+8=12 \\ 12 \times 3=36$$

Aún hay más. El niño se dará cuenta de que si se multiplica el número 12 por 3, es necesario para que subsista la primera igualdad, multiplicar $4+8$ por 3:

$$(4+8) \times 3 = 12 \times 3$$

Tendrá así, sin enseñarle directamente, por el uso frecuente y la constante observación, la idea de uno de los principios fundamentales de las igualdades: si se multiplican los dos miembros de una igualdad por un mismo número, resulta una nueva igualdad.

El maestro tendrá muy en cuenta que estas observaciones son de carácter general; que forzará el cerebro del niño obligando a que los retenga; por el contrario, tratará de no élar el mismo los descubra, y su conciencia quedará tranquila con que sólo lo consigán los más aventajados.

Por otra parte, se tratará de que el niño no haga un uso exagerado e inútil del paréntesis. No es así necesario utilizar el paréntesis en operaciones como ésta:

$$3 \times 4 + 5 = 12 + 5$$

Escrita la expresión

$$3 \times 4 + 5$$

debemos enseñar al niño a efectuar las operaciones indicadas, en cada uno de sus términos, verificando luego la suma de los términos.

LA MULTIPLICACIÓN.

Se supone ya que el niño sabe contar de uno en uno, de dos en dos y hasta de 10 en 10. A esta altura está en condiciones de aprender la tabla de multiplicar.

¿Cual es el método mas conveniente para aprender esta tabla? No creemos posible, como lo hace Laisant poder indicar una marcha fija, como la más conveniente. Sin dejar de reconocer el gran valor del método expuesto por aquel hombre de ciencias, creemos sin embargo que la manera de aprender la tabla varía no sólo con la capacidad intelectual del niño, sino principalmente de la menor o mayor memoria que posea. A un niño de gran memoria le será sumamente fácil aprender la tabla de Pitágoras por el antiguo sistema de la repetición mecánica de los resultados, y en cambio la gran mayoría de los alumnos la aprenderán más fácilmente "construyendo—como aconseja

Laisant—la tabla de Pitágoras, verificando los resultados, examinándola con cuidado, y si el espíritu no lo ha retenido, es necesario reconstruirla, lo que no es muy difícil y de esta manera terminará por verla, aun con los ojos cerrados." Conocida la tabla de Pitágoras, aconsejaríamos enseñar al niño la construcción de las regletas o varillas de Neper. Para la construcción de estas regletas, se pueden tomar unas varillas de cartón como lo indica la figura y dividirla en nueve rectángulos, y cada uno de estos rectángulos, excepto el primero, se subdivide en triángulos.

En el primer cuadro se escribe un número dígito, y en cada uno de los cuadros sucesivos, divididos en triángulos, se escribe con caracteres menores los productos de dicho número por 2, 3, . . . 9. Si el producto consta de una sola cifra esta se coloca en el triángulo inferior, colocando en el superior un cero. Si el número consta de dos cifras se colocan las unidades en el triángulo inferior y las decenas en el superior; construyendo un número suficiente de tabletas, la multiplicación se reduce a una simple operación mecánica. Supongamos así que queremos multiplicar el número 87928 por 4. Tomaremos las varillas correspondientes a los números 8, 7, 9, 2, 8, y las colocaremos unas al lado de otras, como lo indica la figura.

5
1/0
1/5
2/0
2/5
3/0
3/5
4/0
4/5

1	8	7	9	2	8
2	1/6	1/4	1/8	0/4	1/6
3	2/4	2/1	2/7	0/6	2/4
4	3/2	2/8	3/6	0/8	3/2
5	4/0	3/5	4/5	1/0	4/0
6	4/8	4/2	5/7	1/2	4/8
7	5/6	4/9	6/8	1/4	5/6
8	6/4	5/6	7/2	1/6	6/4
9	7/2	6/3	8/1	1/8	7/2

Para efectuar nuestro producto buscaremos la cuarta fila y empezando por la derecha iremos escribiendo de derecha a izquierda 351712.

La operación de esta multiplicación corresponde a la siguiente:

$$\begin{array}{r}
 87928 \\
 \times 4 \\
 \hline
 32 \\
 08 \\
 36 \\
 28 \\
 32 \\
 \hline
 351712
 \end{array}$$

El uso continuo de las varillas de Neper grabará bien en el alumno el mecanismo de la multiplicación y los más aventajados llegarán por sí mismos a efectuar sin necesidad de las tablas, la multiplicación de un número cualquiera por otro dígito. De cualquier forma el maestro debe de hacer en éste, como en la gran mayoría de los casos el papel de director, de modo de despertar en el niño desde sus primeros años el espíritu creador, presentándole las operaciones con una evidencia tal que el niño llegue a imaginar que es él el que está descubriendo lo que en realidad se le enseña. En el capítulo titulado los productos, dice Laisant: "Si formamos tres haces que contengan cada uno 7 bastoncitos, podemos proponernos determinar cuántos bastoncitos habrá por todo. Para esto debemos multiplicar 7 por 3; el resultado que buscamos se llama producto, el número 7 que vamos a multiplicar es el multiplicando y el 3 por el que vamos a multiplicar, se denomina multiplicador. Esta operación se llama multiplicación. Si en vez de juntar todos los bastoncitos, dejamos los tres haces separados, se ve que el resultado, o sea el producto 21, tiene la misma relación con 7, número de bastoncitos de cada haz, que la relación que existe entre 3 y la unidad. Podemos decir entonces indiferentemente:

Multiplicar 7 por 3, es repetir 3 veces el número 7; o encontrar un número que tenga la misma relación con 7 que la que tienen 3 y 1. Multiplicar un número (multiplicando) por otro número (multiplicador), es encontrar un tercer número (producto) que contenga tantas veces el multiplicando como unidades haya en el multiplicador; o bien que tenga la misma relación con el multiplicando, que la que el multiplicador tenga con la unidad.

Estas son fórmulas que no se necesita enseñar al niño de memoria; son ideas que debe asimilarse y nada más. Ahora, en tanto que las fórmulas tienen una apariencia bárbara, las ideas que encierran son de una simplicidad extrema, sobre todo cuando se les traduce en granos de trigo, en bastoncitos o en casillas de papel cuadriculado.

Lo que es indudable es que el niño percibirá desde luego que para hallar un producto no es necesario más que sumar; que el producto de 7 por 3 es $7+7+7$, lo mismo que 3 es igual a $1+1+1$. Y así lo encontramos en la tabla de Pitágoras: tomando la columna que comienza por 7, la que principia por 3, y buscando el punto de unión de las dos columnas, donde se ve 21.

El signo de multiplicar es \times , y la frase: "7 multiplicado por 3 igual a 21" se traduce así: $7 \times 3 = 21$.

En lugar de 7×3 se escribe a menudo 7.3; en vez de 7 y 3 se pueden tomar dos números cualesquiera que representaremos por "a" y "b." Su producto se expresará así: "a" por "b," o simplemente a. b; escribir, por ejemplo, $ab=p$, es un modo de expresar que el producto de "a" por "b" es "p."

Es bueno saber que pueden considerarse varios productos como "a" por "b" por "c" por "d" o "abcd," por ejemplo; esto quiere decir que primero se multiplica a por "b," después el producto obtenido se multiplica por "c," luego el nuevo producto por "d;" "a," "b," "c," "d," se llaman factores y "abcd" es el producto; pueden obtenerse así productos de gran número de factores.

En cuanto a la práctica de la multiplicación, hay que hacer notar que la tabla de Pitágoras solamente da los productos de los números menores que 10. Se enseñará enseguida a multiplicar cualquier número por 10, 100, 1.000, etc.

La aplicación a numerosos ejemplos, conforme a las reglas dadas generalmente en todos los textos de aritmética, podrá ser útil, cuando no sea precedida por teoría alguna. Pero no me cansaré de recomendar que se dé la preferencia al método musulmán, que es casi tan rápido como el ordinario, y mucho más fácil de comprender y practicar, por más que no sea bastante conocido en la escuela francesa, aunque haya sido citado por muchos autores.

Vamos a exponerlo con un ejemplo muy simple (fig. 7): 9347 por 258. El multiplicando tiene cuatro cifras y el multiplicador tres; tomemos sobre un papel cuadriculado 3 líneas de 4 casillas cada una; arriba escribamos las cifras del multiplicando 9, 3, 4, 7, y a la izquierda las del multiplicador 2, 5, 8; después de trazar las líneas de puntos que muestra la figura, escribamos en cada casilla el producto de los dos números correspondientes, como si fuéramos a construir la tabla de Pitágoras, pero poniendo sobre la cifra de las decenas del producto abajo y la de las unidades arriba de la línea de puntos; hagamos por último la adición de los números colocados en las columnas transversales que forman las líneas de puntos, de izquierda a derecha, y hallaremos el producto: 2411526. La gran ventaja de este método es que no se necesita retener los productos parciales, ni observar en la operación orden determinado. Si todas las casillas están llenas, es que nada hemos olvidado.

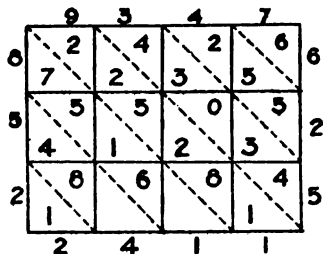


Figura 7.

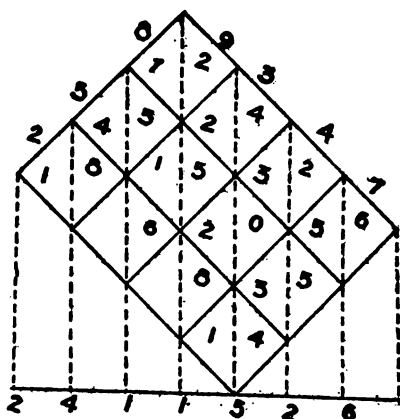


Figura 8.

Siguiendo el mismo ejemplo y con el mismo método, indicamos (fig. 8) una disposición algo diferente, y que puede ser mas cómoda, porque no hay que verificar la suma transversalmente.

Basta ver la figura para comprender su explicación. Toda persona que conozca la teoría de la multiplicación, podrá encontrar la razón del método musulmán; que por ahora no deberemos pretender explicarla al niño. Tal vez él solo la encuentre sin necesidad de que lo obligemos a ello. Lo importante es que este método le interese y que con él puede llegar a calcular correctamente. Desde que aparezca el cansancio o el disgusto, sin tardanza, pasad a otra cosa.

Se llama potencia el producto de varios factores iguales, por ejemplo:

$$a \times a \times a \times \dots \times a.$$

Tal producto se escribe a^n , siendo "n" el número de factores y se lee: la enésima potencia de a. La segunda potencia se llama cuadrado, y la tercera cubo (después veremos por que). El número n se llama exponente.

Por ejemplo, la cuarta potencia de 2 es:

$$2 \times 2 \times 2 \times 2 = 2^4 = 16; \text{ el exponente es } 4.$$

El cubo de 5 es:

$$5 \times 5 \times 5 = 125; \text{ el exponente es } 3.$$

El cuadrado de 7 es:

$$7 \times 7 = 7^2 = 49; \text{ el exponente es } 2.$$

LOS ESTUDIOS SECUNDARIOS.

No es posible fijar reglas que determinen la marcha a seguir en el estudio de cada una de las ramas de las matemáticas, pero se puede y hasta es conveniente establecer observaciones generales y marcar límites dentro de los cuales debe variar su enseñanza. Para fijar estos límites, es necesario tener en cuenta la distinta capacidad científica del alumno que se inicia en el estudio de la ciencia, o del aficionado que revisa una obra de matemáticas con la misma facilidad que analizaría un filósofo un libro de lectura.

En tal sentido, las primeras nociones de matemáticas deben de inculcarse de una manera lenta, pausada, haciendo intervenir a los estudiantes ya sea en las demostraciones de teoremas, ya en la investigación de los problemas; no sería justo ni beneficioso pedir al joven alumno, en las demostraciones, la rigidez que debe exigirse a un estudiante de matemáticas superiores. Se enseña, por ejemplo, en álgebra elemental, que toda cantidad con exponente cero es igual a la unidad; falso concepto que se funda en la nada, y que por lo tanto debe rechazarlo quien conozca las verdades matemáticas. Lo que realmente se quiere expresar es que el límite de toda cantidad cuyo exponente tiende a cero es la unidad. En la enseñanza de las matemáticas elementales son perdonables aun libertades de otro orden, que no advierte el niño. El iniciado en aritmética admite como evidente, que un metro lineal multiplicado por un metro lineal da un metro cuadrado. Si se les pregunta el porqué, contestarán: por definición; y sabemos, sin embargo, que la definición nos dice únicamente que el cuadrado que tiene por lado un metro lineal, se toma como unidad de medida de las superficies; pero se demuestra en geometría que para obtener el número que exprese el área de un cuadrado, basta multiplicar los números que miden sus dos dimensiones, o sea: $1=1 \times 1$.

El error consiste en acompañar a los números que miden la superficie y las dimensiones, las unidades de medidas respectivas, y se dice:

$$1^m = 1^m \times 1^m$$

Si se hubiera tomado como unidad de las superficies el cuadrado cuyo lado vale dos metros, ese cuadrado sería el metro cuadrado del nuevo sistema. En esta hipótesis, y conservando la unidad lineal del sistema métrico decimal, es fácil ver todas las modificaciones que sufrirían las expresiones de las áreas de las figuras. Así el número abstracto que expresa el área de un rectángulo, sería igual a un cuarto del producto de los números abstractos que miden sus dos dimensiones, pues si llamamos P y P' las superficies de dos rectángulos cuyas bases y alturas son respectivamente b y b', a y a', tenemos:

$$\frac{P}{P'} = \frac{b}{b'} \times \frac{a}{a'}$$

Siendo P' el cuadrado cuyo lado vale dos metros, tenemos:

$$\frac{P}{P'} = \frac{1}{2} \frac{b}{1^m} \times \frac{1}{2} \frac{a}{1^m}$$

Luego:

$$\frac{P}{1^m} = \frac{1}{4} \frac{b}{1^m} \frac{a}{1^m}$$

Si se pregunta a un estudiante de matemáticas elementales, cuanto vale la suma de dos números distintos de la unidad, por ejemplo 3 y 4, darán inmediatamente la respuesta: 7 unidades, con la evidencia que pueda tener un axioma. Esta seguridad en la respuesta no es sino adquirida por la costumbre de ver que tres más cuatro son siete. Si se les pregunta el porqué, les causará sorpresa, y sin embargo la razón de ser es que los números se suponen definidos en la expresión de la unidad agregada a un número cualquiera.

Así por ejemplo:

$$1+1=2 \text{ por definición.}$$

$$2+1=3 \text{ por definición.}$$

$$3+1=4 \text{ por definición.}$$

$$4+1=5 \text{ por definición.}$$

Leibnitz, para evidenciar que $2+2$ daban 4, razonaba de la siguiente manera:

$$2+2=(2+1)+1=3+1=4$$

De donde:

$$2+2=4 \text{ L. Q. Q. D.}$$

Hay una tendencia a decir 2 más 2 dan 4, por definición.

Pero aun cuando la comprobación de Leibnitz no es en realidad una demostración, satisface al espíritu. Si aceptamos la definición del número cuatro como la suma de dos más dos, habría que comprobar que $3+1=4$; de la siguiente manera, por ejemplo:

$$3=2+1 \text{ por definición.}$$

Luego:

$$3+1=2+(1+1)$$

pero $1+1=2$ por definición.

$$3+1=2+2$$

y como

$$2+2=4 \text{ por definición}$$

tendríamos:

$$3+1=4.$$

Como se ve, no se gana nada con el cambio; por el contrario, se pierde la ventaja de poder definir la numeración de una manera general.

Los mismos axiomas se admiten como evidentes, ya sea por la costumbre de ver repetirse un fenómeno de una manera invariable, ya sea por intuición.

El postulado de Euclides: por un punto no se puede trazar más que una paralela a una recta dada, no es deducido sino por intuición, y el estudiante lo admite sin mayor dificultad; y, sin embargo, si conservamos la definición antigua de rectas paralelas como, "aquellas que estando en un mismo plano no se encuentran por más que se prolonguen," es posible hacer hipótesis opuestas que serían el postulado de Euclides, de Lobatschewsky y aun el de Riemann según que se admita que por un punto dado de un plano se puede trazar una sola paralela, infinitas o ninguna paralela a una recta dada. Ahora bien, si se enseña a un alumno que no tenga noción de rectas paralelas el postulado de Lobatschewsky, lo acepta con tanta convicción como el de Euclides, sin ocurrírsele meditar sobre la definición de rectas paralelas.

Se dice que el axioma es una verdad evidente por sí misma, pero también podemos suponer lo contrario a lo supuesto en el axioma y nos resultan otras geometrías que no dejan de ser verdaderas, aunque expresadas en otro lenguaje, tales como las geometrías de Veronese e Hilbert, en las cuales se cambia el axioma de Arquímedes: toda longitud dada multiplicada por un entero suficientemente grande, terminará por dar toda longitud dada por grande que ella sea.

Vemos, pues, que en el estudio de las matemáticas elementales, los iniciados pasan por alto, sin oponer dificultad, sin advertirlo casi, todas estas verdades no probadas en los libros, las que podemos clasificar en dos grandes categorías: las primeras son aquellas cuyas demostraciones se evitan para no cansar al estudiante, y son propiamente del dominio de la aritmética, desapareciendo por completo en el estudio de las matemáticas superiores; las segundas, que son reales dentro de la hipótesis hecha, pertenecen más a la geometría, pero se ramifican en toda la ciencia matemática. Y creemos con Poincaré que

si se les suprime en los textos de enseñanza se obedece a una necesidad; los estudiantes no están aún preparados a las verdades rigurosamente matemáticas; no verían sino vanas y fastidiosas susceptibilidades; se perdería demasiado tiempo queriendo hacerlo de una manera más exigente; es necesario que repasen más rápidamente, pero sin pasar de largo, el camino que recorren lentamente los fundadores de la ciencia.

Ya que ha sido necesario, en bien de la enseñanza, tomarse esas libertades, aceptando como evidentes principios que necesitan demostración, ¿no sería ventajoso presentar los teoremas de aritmética en tal forma, que tomen el mismo carácter de evidencia? A ese fin parece encaminarse la última enseñanza francesa. El estudiante de aritmética no está aún acostumbrado a la rigidez de la demostración algebraica; es necesario enseñarle a razonar, pasando de una manera lenta de la comprobación con que se inician los primeros estudios, a la demostración que exigen los teoremas. Emilio Borel, en sus libros de matemáticas elementales, inspirado en las lecciones de aritmética de Julio Tannery, nos expone, magistralmente, esta enseñanza de la aritmética.

Veamos algunos ejemplos adaptados a nuestro medio:

Teorema: Todo divisor de varios números divide a su suma.

Ante todo debemos observar que si suponemos que poseemos, por ejemplo, 40 pesos en billetes de 10 pesos, es evidente que nuestra fortuna 40, es divisible por 10, que es el valor de cada billete.

Veamos ahora el razonamiento del teorema:

Supongamos que Juan tiene 20 pesos en billetes de 10 pesos, Pedro tiene \$30 en billetes de a \$10, y Jacobo tiene \$40 en billetes de a \$10.

Es evidente que las fortunas de Juan, Pedro y Jacobo son divisibles por 10; y que las fortunas reunidas $20+30+40=90$ será también divisible por 10 por estar expresada en billetes de a \$10.

Tomemos otro ejemplo.

Regla: Para obtener el resto de la división de un número por 9, se suma el valor absoluto de sus cifras; si esta suma es superior a 9, se divide por 9, y el resto buscado es igual al resto de esta división.

Supongamos que Juan posee \$431, y quiere comprar el mayor número posible de libros de una cierta colección que se venden a \$9 cada uno. ¿Cuántos pesos le sobrarán? Es claro que el número de pesos que le sobran es igual al resto de la división de 431 por 9; propongámonos justamente encontrar ese resto sin efectuar la división.

Supongamos que los 431 pesos de Juan constan de 4 billetes de a \$100, 3 billetes de \$10 y 1 billete de \$1. Con un billete de \$100 podrá comprar 11 libros de a \$9 que le costarán \$99, sobrándole \$1 por billete, sea \$4 en total; del mismo modo, con cada billete de a \$10, puede comprar un libro que le costará \$9 y le sobrarán \$1; luego con los 3 billetes de \$10 puede comprar un cierto número de libros, sobrándole \$1 por billete, o sea \$3; vemos que a Juan le ha sobrado \$4 de los billetes de a \$100, \$3 de los billetes de a \$10, y el billete de a \$1, o sean $4+3+1=8$.

El número 8 vemos pues que se ha obtenido sumando el valor absoluto de las cifras significativas del número dado 431, y no viene a ser sino el resto de la división de 431 por 9.

Si suponemos que Juan tiene \$843, o sea 8 billetes de a \$100, 4 billetes de a \$10, y 3 billetes de \$1, le quedarían $8+4+3=15$. Con esos \$15 se puede comprar un libro y le sobran \$6. El resto de la división de 843 por 9 no es 15; pero es el mismo que el resto de 15 por 9.

Se ve, pues, que el número 15 se obtiene sumando los números 8, 4 y 3 que no son sino el valor absoluto de las cifras del número 843.

Bajo esta forma la regla es evidente, y no es necesario que el alumno tenga que aprender todos los teoremas de la divisibilidad por 9.

He ahí las hermosas palabras con que Emilio Borel comienza el prefacio de su obra, y que encierran la mejor defensa que se pueda hacer del método indicado:

Las clases a las cuales este libro está destinado, son las primeras en que figura un programa de aritmética razonada; hasta entonces no se ha hecho intervenir el cálculo; la enseñanza cesa de ser exclusivamente práctica para ser teórica; esta transformación debe realizarse con prudencia, sería muy perjudicial dar a los jóvenes estudiantes una enseñanza exclusivamente teórica.

Debemos advertir, sin embargo, para que no se interprete mal el método expuesto, que en algunos problemas de aritmética se exige en las demostraciones la rigidez matemática, de modo que el alumno se vaya acostumbrando al razonamiento algebraico, salvo que se prefiera dejar para el estudio del álgebra la comparación de la marcha indicada, con la demostración propiamente dicha, haciendo ver al alumno la diferencia entre la aritmética y el álgebra.

El estudio de la geometría a dos dimensiones debe efectuarse en superficies de curvatura constante, con el fin de que al transportar las figuras del lugar no varíen de forma. La magnitud de esta curvatura puede ser nula, negativa o positiva y tendremos así las superficies planas, las pseudo-esféricas y las esféricas. En la primera de estas superficies hemos visto que se cumple el postulado de Euclides, modificando la definición de rectas paralelas, según lo hemos indicado en nuestro folleto sobre "Teoría de las rectas paralelas." La definición clásica de rectas paralelas ha sido hoy reemplazada por varios autores siendo uno de ellos Charles Meray en sus "Nuevos Elementos de Geometría." En la segunda existe la paralela de Lobatschewsky con un ángulo $(p) < \frac{\pi}{2}$, y en la tercera no es posible trazar paralela alguna a una recta dada, puesto que todos los círculos máximos se cortan. Este último caso justifica la geometría de Riemann, la que no viene a ser sino la geometría esférica extendida a tres dimensiones.

El estudio de la geometría elemental a dos dimensiones se limita, en nuestros institutos, a las superficies planas, que son las que más se adaptan a nuestro espacio visual y nos dan los conocimientos necesarios para la resolución de los problemas elementales de nuestro mundo real.

¿Es la geometría una ciencia experimental?

¿Debe hacerse intervenir la experiencia en la enseñanza de la geometría?

Hemos dicho que muchos axiomas no son sino experimentales, y como por otra parte la mayoría de las definiciones contienen un axioma, es evidente que la experiencia tiene participación importantísima en los fundamentos de la geometría.

En apoyo de nuestra tesis basta recordar el caso notable, citado por Poincaré, del geómetra alemán M. Klein, que con el fin de investigar si en una superficie de Riemann existe siempre una función admitiendo singularidades dadas, procede de la siguiente manera:

Toma una superficie metálica cuya conductibilidad eléctrica esté de acuerdo con ciertas leyes, según la superficie de Riemann tomada.

Le aplica la corriente eléctrica, y la forma como se distribuye en su superficie, definirá una función cuyas singularidades son precisamente las que se deseaban investigar.

Creemos pues, conveniente hacer intervenir en el estudio de la geometría la experiencia; pero únicamente cuando así lo permita la naturaleza del principio de que se trata, teniendo presente que es preferible no separarse de la demostración abstracta a hacer uso indebido e inoportuno de la parte experimental.

Es un hecho comprobado la dificultad de ciertas personas para concebir las figuras geométricas en el espacio. La enseñanza objetiva, que nos permite hacer ver las figuras en perspectiva, tiene justamente por objeto salvar el inconveniente apuntado; sin embargo, debe hacerse un uso moderado de ella, tratando más bien de que el estudiante se acostumbre a las figuras proyectadas, preparándose así para el estudio de las geometrías descriptiva y analítica.

Hay un punto interesante respecto a la enseñanza del cálculo infinitesimal.

¿No sería conveniente enseñar el cálculo antes de la geometría?

El argumento más poderoso que hemos visto dar a los partidarios de este orden en la enseñanza, se basaba en que el estudio del cálculo infinitesimal nos anunciaba un número ilimitado de dimensiones, y los estudiantes de geometría, acostumbrados a la existencia de tres dimensiones, no veían en el cálculo sino un estudio teórico, máxime

cuando el breve tiempo de que se dispone para su enseñanza no deja entrever sus grandes y múltiples aplicaciones, así como el poderoso auxilio que presta a las demás ciencias.

El error está justamente en no comunicarse la existencia de las "n" dimensiones. Si se estudia la geometría a tres dimensiones, es únicamente debido a que el espacio real nos presenta como verdad evidente lo que no es sino una observación particular. Basta observar que en la geometría analítica no interviene la intuición visual, sino tan sólo la idea de magnitud, de modo que si llamamos x, y, z, las coordenadas que determinan la posición de un punto y $x+dx$, $y+dy$, $z+dz$, las de un punto próximo siendo ds el elemento lineal de nuestro espacio real, tendremos:

$$ds = \sqrt{d^2x + d^2y + d^2z}$$

que es el teorema de Pitágoras generalizado.

Del mismo modo, si las coordenadas de dos puntos próximos fueran, respectivamente, x, y, z, v ... y $x+dx$, $y+dy$, $z+dz$, $v+dv$ el elemento lineal sería:

$$ds = \sqrt{d^2x + d^2y + d^2z + d^2v + \dots}$$

Riemann admite esta igualdad como axioma, sin quitarle el carácter hipotético, y dando a cada punto "n" coordenadas independientes las unas de las otras y variando de una manera continua.

Es evidente que para poder concebir este espacio a "n" dimensiones, es necesario efectuar un estudio más prolijo, que no entramos a considerar por temor de separarnos del fin que nos hemos propuesto; pero sí nos permitimos recomendar la lectura de los trabajos efectuados por Gauss, Riemann, Beltrami, Helmholtz y Poincaré.

En la enseñanza de la geometría tenemos dos grandes métodos: (1°) El método clásico; (2°) el método moderno, que han dado en llamar algunos método concéntrico.

El método clásico que es el que se ha venido siguiendo en Europa, desde la época de los geómetras griegos y que ha sido abandonado en Francia después del decreto del 27 de julio de 1905, consiste en no admitir los principios sin previa demostración.

Para el método moderno de la enseñanza de la geometría recomendaríamos que se tenga muy en cuenta la notable obra de Charles Meray, profesor de la Universidad de Dijón, titulada "Nuevos Elementos de Geometría," este libro notabilísimo estudia a la vez el plano y el espacio poniendo en evidencia las verdades de orden experimental.

El secreto de este nuevo método de enseñanza, consiste justamente en presentar los principios en una forma tal que el alumno, sin necesidad de recurrir a la demostración que exige el método clásico, admitiendo como evidente la gran mayoría de las verdades solamente por la comprobación que la experiencia y la intuición nos presenta.

Lo interesante sería resolver una marcha general a seguirse en la enseñanza de las matemáticas, de modo que facilite el intercambio de profesores y alumnos de matemáticas en la forma que se resuelva en este Honorable Congreso.

RESUMEN.

Enseñanza de las matemáticas en las escuelas públicas.—Sería evidentemente interesante establecer para todas las Naciones que interienen en este Congreso, un mismo plan de estudio a seguirse en la enseñanza de las matemáticas, facilitando así el intercambio de profesores y alumnos de una República a otra y este plan debe comenzar justamente en las escuelas públicas. La primera enseñanza de las matemáticas comprende dos grandes ciclos: (1°) La iniciación matemática; (2°) los estudios secundarios (altas escuelas).

Es evidente que el sistema de enseñanza, debe variar de uno a otro ciclo, pero esta variación debe ser lenta, pausada, sin saltos bruscos, de modo que el alumno pase de un sistema a otro sin sufrir las consecuencias que podría traer un cambio de método.

En la iniciación matemática debe intervenir en un principio únicamente la comprobación. Debe procederse de tal modo que el niño llegue a admitir como evidente y general los principios matemáticos, que se le inculcan, haciéndole ver con la comprobación continúa la producción de un fenómeno.

El cerebro del niño no está aún preparado para la demostración matemática, y llega a admitir fácilmente todo aquello que se le enseña. La iniciación matemática debe evidentemente empezar por el dibujo; pero sin entrar en mayores detalles por temor de sobrepasar el número de palabras impuestas a este resumen por el programa del congreso, nos limitaremos a indicar la conveniencia de que todo maestro tenga bien presente, y aún tome como guía la notable obra que sobre la iniciación matemática ha escrito A. Laisant.

Por otra parte en los estudios secundarios los principios deben inculcarse también por medio de la comprobación; pero esta comprobación deja de ser puramente de observación, haciendo intervenir el razonamiento. Lo interesante ante todo es que se abandone el método clásico, adoptando como se ha hecho en Europa y algunas Repúblicas Americanas, el método comprobativo.

Emilio Borel, en sus libros de matemáticas elementales, inspirado en las lecciones de aritmética de Julio Tannery, nos expone, magistralmente, esta enseñanza de la aritmética.

Veamos algunos ejemplos adaptados a nuestro medio:

Teorema: Todo divisor de varios números divide a su suma.

Ante todo debemos observar que si suponemos que poseemos, por ejemplo, 40 pesos en billetes de 10 pesos, es evidente que nuestra fortuna 40, es divisible por 10, que es el valor de cada billete.

Veamos ahora el razonamiento del teorema:

Supongamos que Juan tiene 20 pesos en billetes de \$10, Pedro tiene \$30 en billetes de \$10, y Jacobo tiene \$40 en billetes de \$10.

Es evidente que las fortunas de Juan, Pedro y Jacobo son divisibles por 10; y que las fortunas reunidas $20+30+40=90$ será también divisible por 10 por estar expresada en billetes de a \$10.

Tomemos otro ejemplo:

Regla: Para obtener el resto de la división de un número por 9, se suma el valor absoluto de sus cifras; si esta suma es superior a 9, se divide por 9, y el resto buscado es igual al resto de esta división.

Supongamos que Juan posee \$431, y quiere comprar el mayor número posible de libros de cierta colección que se venden a \$9 cada uno. ¿Cuántos pesos le sobrarán? Es claro que el número de pesos que le sobran es igual al resto de la división de 431 por 9; propongámonos justamente encontrar ese resto sin efectuar la división.

Supongamos que los 431 pesos de Juan constan de 4 billetes de \$100, 3 billetes de \$10 y 1 billete de \$1. Con un billete de \$100 podrá comprar 11 libros de a \$9 que le costarán \$99, sobrándole \$1 por billete o sea \$4 en total; del mismo modo con cada billete de a \$10, puede comprar un libro que le costará \$9 y le sobrarán \$1; luego con los tres billetes de \$10 puede comprar cierto número de libros, sobrándole \$1 por billete, o sea \$3; vemos que a Juan le ha sobrado \$4 de los billetes de a \$100, \$3 de los billetes de a \$10 y el billetes de \$1, o sean $4+3+1=8$.

El número 8 vemos pues que se ha obtenido sumando el valor absoluto de las cifras significativas del número dado 431, y no viene a ser sino el resto de la división de 431 por 9.

Si suponemos que Juan tiene \$843, o sea 8 billetes de \$100, 4 billetes de \$10 y 3 billetes de \$1, le quedarían $8+4+3=15$. Con esos \$15 puede comprar un libro y le sobran \$6. El resto de la división de 843 por 9 no es 15; pero es el mismo que el resto de 15 por 9.

Se ve, pues, que el número 15 se obtiene sumando los números 8, 4 y 3 que no son sino el valor absoluto de las cifras del número 843.

Bajo esta forma la regla es evidente, y no es necesario que el alumno tenga que aprender todos los teoremas de la divisibilidad por 9.

He ahí las hermosas palabras con que Emilio Borel comienza el prefacio de su obra, y que encierran la mejor defensa que se pueda hacer del método indicado:

Las clases a las cuales este libro está destinado, son las primeras en las que figura un programa de aritmética razonada; hasta entonces no se ha hecho intervenir el cálculo; la enseñanza cesa de ser exclusivamente práctica para ser teórica; esta transformación debe realizarse con prudencia, sería muy perjudicial dar a los jóvenes estudiantes una enseñanza exclusivamente teórica.

En la enseñanza de la geometría tenemos dos grandes métodos: (1) El método clásico; (2) el método moderno, que han dado en llamar algunos método concéntrico.

El método clásico que es el que se ha venido siguiendo en Europa, desde la época de los geómetras griegos y que ha sido abandonado en Francia después del decreto del 27 de julio de 1905, consiste en no admitir los principios sin previa demostración.

Para el método moderno de enseñanza de la geometría recomendaríamos que se tenga muy en cuenta la notable obra de Charles Meray, profesor de la Universidad de Dijón, titulada "Nuevos Elementos de Geometría," este libro notabilísimo estudia a la vez el plano y el espacio poniendo en evidencia las verdades de orden experimental.

El secreto de este nuevo método de enseñanza, consiste justamente en presentar los principios en una forma tal que el alumno sin necesidad de recurrir a la demostración que exige el método clásico, admite como evidente la gran mayoría de las verdades por sólo la comprobación que la experiencia y la intuición nos presenta.

Lo interesante sería resolver una marcha general a seguirse en la enseñanza de las matemáticas, de modo que facilite el intercambio de profesores y alumnos, en la forma que se resuelva en este Honorable Congreso.

THE EDUCATIONAL VALUE OF ENDOWMENT FOR PUBLIC SCHOOLS.¹

By JOHN A. BRASHEAR.

Perhaps there has never been a fund given by an individual for public-school service that has accomplished so much good as one which was intrusted to the writer in 1910 for the purpose of the betterment of teaching and teachers in the public schools of the city of Pittsburgh. At the time the gift of a quarter of a million dollars was placed in the hands of the writer by an anonymous donor there was but a vague idea of how it should be applied to bring the best results in the direction of efficiency in our public schools. At that time there were about 80,000 pupils in the Pittsburgh schools and about 2,000 teachers. With the consent of the donor, and with his best wishes, a commission of citizens of Pittsburgh was appointed to assist in developing a plan that would give the largest measure of success in the betterment of the schools. The commission decided to request several educators connected with various teachers' colleges to come to Pittsburgh and discuss the problem with us. The outcome of this discussion was that the best possible solution was to send as many of the teachers as possible to summer schools for rest, recreation, and study, but with the understanding that the teachers were not to be overtaxed with studies after their 10 months' of hard work in the schoolroom.

¹ Since the above address was given, the available fund for this splendid work has been doubled by the donor of the original fund.—J. A. B.

The selection was quite a formidable task, but circulars were sent to the 2,000 teachers, asking those who would like to take a summer course to write us what their ideals of teaching were and what they hoped to bring back in the way of efficiency in their school work. We called to our assistance the superintendent of the schools, the principals of the schools, and in every way possible endeavored to select the teachers whose hearts were in their work. In many cases we gave the preference to those who had used their savings previous to this time for the purpose of study in summer schools. Various modifications in the manner of selecting teachers have been made during the last five years and it is likely that not more than 5 per cent of those appointed have failed to satisfy the expectations of the commission, which, though not exacting in their nature, were supposed to be commensurate with the expenditure of effort made by the commission for the successful issue of the project.

As there were so many applications it was deemed best in the third year to pay two-thirds of the expenses connected with the summer schools, which plan has been carried out every year since it was inaugurated. The teachers appointed were requested to send a report of their summer work, and it is pleasant to say that many of the documents coming to us are worthy of a very high mark and give us positive evidence of the success of the enterprise.

The method of choosing the schools for attendance by the teachers was rather a difficult problem, as it was our desire to have them scattered from the far east to the west. This was accomplished by asking the appointees to make a choice of at least three schools which they would like to attend, and with a few exceptions the schools were selected which gave the best courses in the lines of study desired by the teacher.

Not only did the teachers return to Pittsburgh with a better knowledge of their various studies, but with an added breadth of fellowship and a larger love for their kind. They have organized themselves into a working body as a whole, with an enthusiastic board of officers, dividing the organization into chapters for the better handling of various kinds of helpfulness in the community. One of the most potent factors for betterment in the public-school work, which seems to be the result of experience of these teachers at summer schools, is the spirit of democracy which has developed among them, the principal, the primary teacher, and the kindergarten teacher having in common the desire to contribute each his or her share of helpfulness for the good of all, which gives them a deeper appreciation of each other's value and a greater sympathy and better understanding of each other's needs. Then, too, the broader outlook which their experience has given them has carried them beyond the limits of the schoolroom, and their work as educators has found expression in almost every phase of uplift and helpfulness of which the community has need.

Three years ago it was decided to furnish scholarships for a number of principals of the schools of Pittsburgh, aiming to get at the heads of the departments of the schools. This policy has proven to be very acceptable and valuable. The deans of the various colleges and institutions where our teachers have studied during the summer speak most highly of the enthusiasm and interest of the Pittsburgh teachers, and every year the enthusiasm seems to grow and spread. The superintendent of our schools has more than once said to the writer and in public that the inspiration from those who have been sent to summer schools is beyond anything he has ever met with in his career as an educator.

Those who have been sent to summer schools have received so much benefit from the fund that many of them have saved from their earnings to attend school again in succeeding summers. Here I append a summary of the work done during the last six summers, and I give you this paper solely for the purpose of showing what splendid help can be given these institutions, coming from the proper sources and directed in the proper way, toward the betterment of that great bulwark of our Nation, namely, the public schools.

Number of scholarships awarded during the six years since the fund was established, 716. Of this number three teachers were from the Western Pennsylvania Institution for the Blind.

Number of institutions to which teachers have been assigned, 43.

Number of States in which these schools are located, ranging from Maine to California, and from Colorado to the State of Washington; also to Toronto, Canada, and Munich, Germany, 17.

The amount of money dispensed for scholarships by the commission in the six years since the establishment of the fund, \$64,540.

EDUCATIONAL AND SOCIAL ECONOMIC CONTRIBUTIONS OF THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION TO PAN AMERICAN INTERESTS.

By ALVIN E. POPE,

Chief, Departments of Education and Social Economy of the Panama-Pacific International Exposition.

The world's greatest international exposition, when measured by unanimous recognition of its beauty as a spectacle, its immediately obvious educational value and its financial success, closed its gates on December 4, 1915. The dismantling of this marvelous creation, which human ingenuity devised to harmonize with the wonderful setting provided by nature, is now under way. Curiously enough, the fiercest conflict employing the deadliest instruments for the destruction of man and the creations of man—an international exposition of hate and the most modern means of satisfying hate—was coincident with the largest and most successful assemblage of nations to promote the peaceful arts, sciences and industries for the advancement of humanity. The European war restricted the present constructive influences of the Panama-Pacific International Exposition and diverted them chiefly to Pan American countries and the Orient. Notwithstanding the fact that each day this war represents an expenditure in excess of the entire cost of the San Francisco Exposition, the destructive influence of the exposition of hate, sooner or later, must succumb to the constructive influence of the exposition of human advancement. It therefore seems fitting to present to the congress here assembled a brief summary of the beneficent influences which were exerted and which we believe will be potent for lasting good.

First let us consider the purpose and functions of international expositions. From trade fairs and festivals of local importance appealing to limited communities and special interests, step by step expositions of more general importance were evolved; the provincial expanded into the national and the national into the international, until now the universal or international exposition is a great world university for the practical education of millions. It inspires thought and points the way to achievement. It familiarizes and humanizes. It brings the peoples of the world closer together, and by demonstrating achievements of many countries, enables the selective instinct to operate for the elevation of the plane of humanity in all countries. The demonstration is not confined to tangible, visible objects; it largely and probably most fruitfully includes the intangible and invisible—plants the seed-thought which intelligence will develop into applied thought and beneficial action.

Because of most serious purpose, because of functions diverse but each important, it results that a modern international exposition is like a huge and most complicated machine which gathers knowledge from everywhere and distributes it universally. Each part in this machine is planned for a purpose and all must coordinate to perform their several designed uses harmoniously and in synchronism, else the full efficiency of the mechanism will be reduced and the universality of its influence will be lost.

To one vast arena the latest and best products of human ingenuity are drawn, but these exhibits of the offspring of mind and matter must be arranged, displayed, and explained in such orderly and logical sequence, that the total effect is a panorama of present-day civilization, whereon each observer may discover objects of personal, business or professional interest, but at the same time made to feel an inspiration for development and progress. The panorama must show how small is self or community or even nation when compared with what the world is and does. All departments in an international exposition must contribute to a well defined central purpose and every exhibit must add a proper quota to the fundamental idea, which makes its department an effective element in the complex mechanism of the whole exposition. Ideas originating in a department must coordinate in expressing a logical development, and the collections of ideas in each department must so blend with the presentations of other departments that the combined total will be fused into a grand and inspiring ideal clearly evidencing the best efforts of men for men.

The Panama-Pacific International Exposition, favored by a most wonderful natural setting, preeminently appealed to the love of the beautiful, for it developed appreciation of harmony and art in combinations of color, architecture, sculpture, landscape gardening, and illumination. Words and pictures are inadequate to convey any conception of the beauty of the spectacle temporarily presented on the shore of San Francisco Bay, but it will live forever in the memories of those and only those who saw it. Most of this beautiful creation was of such a nature that it can not be reproduced, but in its brief life, it substantially modified and improved the artistic taste and judgment of those who were fortunate enough to view it.

Thus one of the many objects of the exposition was accomplished; the aesthetic was satisfied and inspired, but the underlying purpose to teach effective lessons in all lines of human endeavor was not and naturally could not be made so obvious. The function of the division of exhibits was to present objects and ideas of substantial and permanent value to mankind, and of the 11 departments in that division none taught more effective and enduring lessons than the departments of education and social economy.

These departments broadly include the agencies employed for the betterment and advancement of human beings, either individually or collectively. They embrace every principle governing mankind, whether considered as a complicated living organism, or as a complex social organization.

The motive of these departments was to inspire widespread movements in all lines of social service. The exhibits were arranged to particularly emphasize modern principles and methods of education, hygiene, municipal management, child welfare, industrial welfare, insurance in all its branches, community interests, etc., and to demonstrate the advantages of applying these principles to the prevention of evils and the increase of efficiency through cooperative thought and action.

These two departments established a policy which resulted in innovation after innovation. Exhibitors, when invited to participate, were restricted to teaching the one or two principles of education or of social economy in which they excelled. Duplications were thus avoided and each exhibitor was given exclusive privilege to present principles allotted to him. Every word, picture, or object not essential to the teaching of that principle was discarded and every mechanical or artistic device which would simplify the lesson or make it more impressive was procured. For the first time in exposition practice, the world's greatest experts were assembled to create exhibits for the departments of education and social economy. Wax workers, glass blowers, model makers, artists, and artisans were imported from Germany, Austria, France, Italy, and other countries. All the experts in exhibit technique from this country were also utilized, with the result that the departments of education and social economy were able to give expression to their highest abstract principles in visible, comprehensible, and material form. Most ingenious devices were invented for the

purpose of conveying to the visiting public abstract ideas in a manner certain to leave strong and lasting impressions. The main innovations by these departments were in confining exhibits to principles and the material methods of interpreting those principles. Exhibits were so selected and arranged as to give unity and sequence in the presentation of the great problems of modern civilization and suggestively bring forth their underlying purpose.

In order to secure a definite conception of the influences of these departments on Pan American interests, it will be necessary to describe exhibits, outline the lessons they teach, and trace their probable influence. The departments embrace many sections or classes, each of which is composed of hundreds of important exhibits. Since it is impossible to describe all of these exhibits, it will be necessary to select a specific and typical case from not less than three different classes.

The first specific case is selected from the hygiene section, which is composed of hundreds of exhibits, the most important of which present lessons on communicable diseases, by the United States Public Health Service; exposure of fake patent medicines, by the American Medical Association; typhoid, tuberculosis, and hygiene in the school, by the Pennsylvania State Board of Health; occupational diseases, by the State Board of Health of Massachusetts; methods of educating the public in hygiene and sanitation, by the New York State Health Department; mouth hygiene, social hygiene, mental hygiene, child hygiene, Red Cross, etc., by national organizations; hospitals and hospital service, by Argentina; tropical hygiene and sanitation—including malaria and yellow fever, by the Department of Public Health and Charities of Cuba; also, hookworm prevention by the International Health Commission, a branch of the Rockefeller Foundation.

In the section of hygiene the exhibit demonstrating the hookworm ravages and methods for its prevention is selected. The department suggested the exhibit methods to be employed; the International Health Commission assembled and arranged the scientific data; exhibit experts were employed to execute the plans. These experts made large models of hookworm eggs, of the larva, of the male and female hookworm and of a cross section of the skin showing the manner in which hookworms make their entrance. They reproduced in models, portions of the body, such as hands and feet, showing the pathological effect produced by the entrance of hookworms and a portion of the small intestine showing fully developed worms attached thereto. Life-size and lifelike models were made of children, showing different stages of the disease, its effect in stunting their growth and symptoms such as pallor of skin, enlarged abdomen and angel wing shoulders. Typical homes, before and after the occupants were cured of the hookworm, were reproduced in models. To the foregoing were added maps, photographs, charts, lantern slides and motion-picture reels, most of which interpreted different phases of the hookworm lesson.

The visiting public was interested. Ignorance was replaced by knowledge and understanding. The visitors were surprised to learn that over half the population of the world lives in the hookworm belt; that in some sections only from 10 to 15 per cent of the population are afflicted, while in other sections 90 per cent or more have the disease. They observed how the hookworm is hatched in the soil; how it enters the body, passes through the blood streams, enters the lungs, is coughed up, swallowed, and finally reaches the small intestine, where it attaches itself with a hook and soon develops from a microscopic worm to a worm one-fourth of an inch in length. They saw how each worm consumes a drop of blood a day; how it moves about from time to time, lacerating the intestines, causing much bleeding; how it injects a poisonous saliva into the system and otherwise poisons the individual. They learned that the life of a hookworm is about seven years; that often from two to five thousand worms are removed from an individual; that the eggs are laid in the intestines but pass from the intestines into the soil before they hatch; that it is possible for a thousand of these microscopic worms to enter the body from a handful of polluted soil in less than an

hour's time. They saw how the hookworm incapacitates individuals to such an extent that it devastates whole communities, producing misery and poverty, hindering material and intellectual development. Its ravages will ultimately be more disastrous than the European war.

They learned that there was a specific "thymol"; that a victim can be cured for about 7 cents, and that the introduction of sanitary toilets would prevent the spread of the disease. The attendants in charge of this exhibit, like the attendants in charge of other exhibits in these departments, were the best available experts, capable of intelligently answering any question. They had spent years in fighting the hookworm in the southern States.

The Australian Commission at the exposition organized a movement to eradicate the hookworm from Australia. New Zealand, China, and other countries started investigations. I understand, arrangements have been made to begin a systematic war against this plague in several Pan American Republics. This crusade promises to surpass all previous attempts to eradicate a communicable disease.

The lessons in malaria, tuberculosis, typhoid, etc., were equally astounding. For the first time the public realized that the real enemies of mankind are very small—most of them so small that they cannot be seen with the naked eye—and that the great evils we most fear do a comparatively small amount of damage.

After inspecting these exhibits, visitors were filled with a great desire and determination to perform important social services by assisting in the destruction of the enemies of mankind, through promoting health, morality, and intelligence. The exhibits in the hygiene section were prepared and arranged to produce by suggestion an inspiration so strong that it gripped the public and brought the most desirable and widely spread results.

The second typical illustration was selected from the hundreds of educational exhibits. The most important of these taught lessons on such subjects as national educational problems, by the United States Bureau of Education; agricultural education, by the Department of Agriculture, under the auspices of the Bureau of Education; the centralized method of State control of its public schools, by New York State; State-aided vocational schools, by Massachusetts; rural schools, by Oregon; consolidated rural schools, by Indiana; school museums, by St. Louis; museum extension work, by the N. W. Harris Extension of the Field Museum; scientific research, by the Carnegie Institution; higher education of women, by Smith College; open-air schools, by the Elizabeth McCormack Memorial Fund; out-of-door education and school architecture, by the State of California; school music, by the city of Oakland; a city public school system, by Los Angeles; and the organizations of a public school system, by the Department of Education of the Philippine Islands.

From this group the Philippine educational exhibit is chosen for illustration, on account of its importance to Pan-American interests. The Philippine system was organized by a number of American school teachers who, unhampered by local tradition and political restraints, have solved problems of education, labor, commerce, and colonization. They brought the results of their work to the exposition, and their commissioner of education and assistant commissioners personally demonstrated the principles which they advocated.

They have developed a centralized method of school management governed by one head, but so arranged that credit for all achievements is in each case given to the person who executes, and never to the authorities in charge. The curriculum is well balanced, covering academic and industrial work and physical training.

The school management makes a thorough study of the natural resources of each community. The teachers have discovered practical use for over 50 fibers previously having no value, and new uses for nearly 200 well-known fibers. They have designed for the use of this material articles of practical commercial value. The Philippines and the Malay Archipelago have been searched for native designs to adorn these

articles. Where practical, they use natural colors; but the world's best chemists have been employed to find inexpensive and fast dyes for each material. The school children secure their own raw material, if possible; otherwise it is furnished to them by the central bureau, at a slight advance over cost, together with plans and designs. The boys and girls are thus taught to make baskets, hats, laces, textiles, furniture, etc. Advanced students from the better schools, after graduation, go into the rural districts and act as agents, collecting the finished articles from the schools and encouraging the pupils to do home work. Each article is tagged, giving the name of the boy or girl who made it, his or her age, grade in school, name and location of school. These articles are brought to Manila or some large center where trade fairs are organized by the school management for the purpose of selling the goods. The school receives a profit on the raw material; the manufacturer's profits go to the pupil who made the article; the jobber's commission goes to the pupil who collected the material. The retail profit pays for the selling and in addition yields the schools a profit of about 20 per cent.

The Philippine Bureau of Education does not stop with this industrial work, but encourages agricultural education by the introduction of school gardens, which sometimes take the form of sea gardens in localities where the natives live from the products of the ocean. Here sponges, oysters, pearl oysters, varieties of useful sea weed, and fish are propagated. In doing this the pupils neglect no academic work. They are taught in the primary grades sanitation, health, citizenship, good manners, and right conduct. Until recently the children did not know the joy of play. Cock fighting and dice throwing have been almost entirely replaced by modern athletics. All forms of outdoor sports are popular, and to-day the children are great baseball enthusiasts. The schools are developing the commerce of the country, instead of following commercial development. There are over 5,000 of these schools scattered throughout the Philippine Islands. The Philippine Government pays the entire cost of public instruction. The natives want more schools and are willing to contribute to their support. The rapid increase of school buildings can not keep pace with the growth of attendance. At least 25,000 children are continually awaiting with eagerness the completion of school structures. A majority of the teachers are now Filipinos, and their number is rapidly increasing. It is to be hoped that some day they will be strong enough to sustain this educational system without outside influence, but that day will not arrive until most of the citizens have received the benefits of these schools. They exhibited at this exposition in order to teach their lessons to the American Republics, and with the hope of establishing an outlet for the products of their schools in these countries.

This exhibit demonstrates the impracticability of divorcing the child from his or her environment and illustrates the long recognized fact that the fundamental problem of education is to give such instruction as will better equip children for citizenship in the environment in which they must spend their lives. Only a few talented are now and then capable of acquiring new environments. We have made many mistakes along these lines with the American Indian.

This exhibit also teaches a lesson in colonization. Through the schools the United States undertook to develop a people, to build up the industries and commerce of the nation, with the only purpose of securing part of that commerce in competition with other nations.

It is quite different from the method of exploiting the resources of a country for a few political and financial favorites.

It is quite different from the old system of colonization, where the colonists were taxed and pillaged for the purpose of enriching favorite families of a stronger nation.

Before much progress could be made it became necessary to break up many long-rooted customs, which was no easy task, but it has been thoroughly and effectually accomplished. For instance, every pupil attending school used to be accompanied by

a servant, who acted as valet. Aguinaldo's son had four valets. All of these servants are now pupils, and this boy carries his own books and studies and plays the same as other boys.

After thoroughly inspecting this rigid application of the basic principles of education, visitors realized that the schools of one generation form the character of the nation of the next generation and they were zealous to learn what additions, what changes, and what restrictions would improve their own schools so as to develop a better manhood and a better citizenship. The spirit of this department inspired them with the determination to encourage their schools and to support them for the sake of efficiency, preparedness, and all-around progress. While this lesson is more applicable to the tropical American countries, where physical conditions are somewhat similar to those in the Philippines, the lessons here taught have been more carefully studied and will be more thoroughly utilized by the United States and the Southern Republics.

The third section from which a typical case was chosen is the section of insurance and industrial welfare, which represented several hundred exhibitors, where lessons were taught on industrial welfare, by the United States Steel Corporation; safety devices by the casualty department of the *Ætna* Life Insurance Co.; profit-sharing by the Ford Motor Co.; fire destruction and fire prevention by the Hartford Fire Insurance Co.; education of policyholders on preventive medicine and the medical service rendered to policyholders and employees, by the Metropolitan Insurance Co.; agricultural educational extension work, by the International Harvester Co.; a collective exhibit on all phases of insurance, by the "Insurance Field"; and health conditions, by the Prudential Insurance Co., of America.

The pertinent illustration of permanent value to the Pan American Republics from this group is the exhibit on life insurance and public welfare by the Prudential Insurance Co. of America. Considering that as yet only a beginning has been made in the development of life insurance in Latin-American countries, this thoroughly scientific and artistically beautiful exhibit attracted unusual interest and attention. Aside from a display of exhibits on life insurance methods and results, a large number of charts and diagrams were shown visualizing the salient facts of the morbidity and mortality problems of the entire Western Hemisphere. The charts admirably emphasized the practical possibilities of a closer union between Pan American Republics in that the facts displayed were obtained through the courteous cooperation of nearly all the governments of the Western Hemisphere. Three years were spent in collecting the required statistical information, and for the first time in the history of the western world the remarkable sanitary and medical progress of Latin-American countries was shown in a uniform and scientifically standardized manner, to conform to the most exacting requirements of statistical science.

The three specific and typical cases herein described are representative of hundreds of exhibits in the departments of education and social economy. The mass of the people in San Francisco have repeatedly studied the principles displayed and have been educated to new standards which will mold their future development. The Pacific coast is similarly affected but to a lesser degree. The leading citizens of every State made use of the opportunities afforded, thus affecting the whole nation. Foreign countries could not send so many representatives, but among those sent were the leaders who guide and direct the course of events in their respective countries and students who will become future leaders. They return to their home countries and open campaigns to educate the mass of their citizens to the new ideals. This influence in time permeates the whole country. In this way the exposition will influence the future of Pan American interests.

This process can be practically illustrated by the instance of Argentina: Dr. Ernesto Nelson, director general of Secondary Industrial and Commercial Education of Buenos Aires, made a thorough study of the departments of education and social economy, covering a period of several months. He personally photographed every chart

of importance and almost every exhibit in the Palace of Education. Other members of the Argentine Commission and Argentine students from the University of California and from eastern universities, and prominent professional and business men of Argentina also, made a thorough study of the principles visualized in the departments of education and social economy. Most of these people have or will return to Argentina with many new ideas and new standards which they will disseminate throughout their country. What is true of Argentina in this respect is also true of most every Pan American Republic.

In view of the fact that we are here considering only a few of the most important contributions of the Panama-Pacific International Exposition to Pan American interests, it will be impossible to mention all the many important contributions from Pan American Republics to the exposition. It is to be regretted that financial conditions produced by the war, in advance of the opening of the exposition, prevented the participation of many Latin-American Republics. Notwithstanding, there was probably a larger representation than at any other exposition and the result has been most effective. Uruguay made a striking exhibit of its method of handling charities and of its open-air schools. Cuba's exhibit on malaria has been helpful in suggesting a Pan American movement to eradicate that destructive disease from the Western Hemisphere. Argentina demonstrated its system of secret and compulsory ballot, which will be of great importance to many Pan American countries. Their exhibit in education revealed the fact that Argentina and the United States—two countries under almost the same climatic conditions—with a similarly mixed population, encounter practically the same educational problems, requiring similar experiments, meeting similar failures and successes, and in time arriving at like conclusions. This demonstrates the necessity for the people of these two countries to familiarize themselves with what is transpiring in each of these countries in order that they may prevent much waste by eliminating this duplication of experiments. Each can profit by comparison, criticism, and emulation of methods. One feature of Argentina's contribution was its normal language schools, where each subject in the course of study is taught in several languages. If a student intends to specialize in any language, as French or English, he will take the entire course of normal training in that language. Another feature of their exhibit was the introduction of the "cup of milk," which is given to every pupil and which has done much to reduce the drink habit. Argentina's educational and social economy exhibit, being more extensive than the exhibits of other Pan American Republics, has been chosen as an example; nevertheless, the principles which apply to Argentina equally apply to nearly all Pan American countries.

The benefits of the departments of education and social economy should be perpetuated in permanent institutions. Such institutions should assume the form of combined industrial and sociological museums which should be located in each Pan American Republic and to which all should contribute exhibits. Such museums will familiarize the people of one nation with the opportunities, needs, and attainments of the citizens of other nations. This will lead to a higher citizenship and to a greater development of the natural resources of each country.

The great American international expositions have made many important contributions to the promotion of a sentiment of real friendship and unity of purpose among Pan American Republics. The World's Fair of Chicago in 1892, the Pan American Exposition of Buffalo in 1901, the Universal Exposition (Louisiana Purchase) of St. Louis in 1904, and the Panama-Pacific International Exposition held in San Francisco in 1915, all more or less gave emphasis to the international bond of union which holds together peoples of the Western Hemisphere.

The people of the United States, through the medium of these expositions, more effectively than could have been attained by any other method, have had brought to their attention the achievements of Latin-American countries in science, art, and industry, and conversely, the citizens of the Pan American Republics have become

better acquainted with the marvelous resources, the material progress, and the lofty aims of the people of our own country.

A nation can not be true to itself, work out its destiny in its own way at its own cost, and best perform its special mission in the world's work without thoroughly studying and profiting by the experience of other nations. International expositions are the best and perhaps the only means of bringing the people of the world nearer to the realization of a more perfect and enduring civilization. Education is a prerequisite for understanding this, and social economy visualizes the intelligent coordination of the material, moral, and spiritual efforts of human beings and directs all toward the desired goal of the largest happiness for the largest number. Time will develop and history sustain the judgment that to this end the Panama-Pacific International Exposition of 1915, chiefly through its educational and social economic contributions, was a most, in fact, the most potent instrument for promoting exchange of thoughts between the Americas and thus drawing the Pan American Republics into a closer bond of permanent and mutually beneficial union.

PROYECTO SOBRE EDUCACIÓN MODERNA.

Por RODOLFO ROBLES,

Profesor de la Facultad de Medicina de Guatemala.

El desarrollo constante y cada día más grande que toman todas las ciencias en general ha hecho que hoy, el cerebro más privilegiado no pueda retener en la memoria, en ninguna de sus múltiples ramas, lo que se ha escrito y menos podría recordar lo que se publica todos los días en los diferentes países del mundo; más aún, el tiempo limitado de la vida del hombre no podría permitir ni siquiera el poder leer lo que a diario se escribe y menos considerarlo. La especialización nació y con ella se pudo zanjar esa dificultad material; mas siendo incesante el poder creador de los cerebros, la división y subdivisión en los diferentes ramos del saber humano se hicieron más grandes; pero llegó ya el momento en que la especialidad no podrá dividirse más, porque el entrelazamiento de las ciencias es tal, que nos es imposible concebir una tan solo sin la ayuda eficaz de las otras. El conocimiento del idioma, si no profundo, por lo menos necesario para la comprensión de lo que se estudie, nos roba ya una gran parte del precioso y pequeño espacio que nos permite nuestra corta existencia; si agregamos a esto que hoy día es imposible para leer lo que se escribe en el mundo, el no saber por lo menos dos idiomas además del nuestro, encontramos, restando el tiempo exactamente necesario para aprenderlos, que ya lo que queda es demasiado corto. Planteado el problema así nos preguntamos ¿Cuál sería la solución o soluciones? Primero: Alargar la vida de los hombres lo más posible; segundo, ya que la utopía de un idioma universal es imposible, preciso será facilitar las relaciones de los diferentes países, estrecharlas y entrelazar sus existencias para el mejor conocimiento de las lenguas en lo que, en verdad, cabe el honor del primer puesto a la gran nación norte-americana quien multiplicando las fundaciones científicas y los congresos procura conseguirlo; el congreso de hoy es una prueba de lo que afirmo; tercero, procurar el mayor desarrollo del cerebro por una educación progresiva siguiendo la ley biológica que dice "que la fundación hace el órgano;" cuarto y último, procurar por medio de una organización especial disminuir el tiempo material de la lectura sintetizando los libros y periódicos, procurando por medio de cuadros sinópticos y abreviaciones que sin perder su claridad reduzcan el lapso de tiempo que se necesita para recorrer con los ojos las diversas publicaciones de los autores. El desarrollo de estas cuatro proposiciones es lo que constituye el moderno trabajo que hoy tengo el honor de someter a vuestra consideración. No pretendo, por consiguiente, crear

nada nuevo; pero habré logrado mi objeto, si consigo llamar la atención de personas más caracterizadas que yo para que traten de solucionar este importante problema.

Alarga la vida del hombre: Es indudable que si bien miles de individuos han dado y continúan dando todo su poder cerebral para aumentar la vida de la humanidad, también es cierto que miles de hombres viven ocupados en estudiar los medios de destrucción más espantosos; la ferocidad de la actual guerra europea prueba lo que digo. Todo trabajo en pro de la paz universal, utopía por hoy, es poco y esto no vendrá a ser una realidad sino cuando los pueblos hayan comprendidos entremesclándose y estrechando sus relaciones, que no deben existir fronteras y que todos somos hermanos. La medicina en su ancho campo continúa robando víctimas a la muerte; las obras de saneamiento que han hecho los americanos en Cuba y Panamá quedarán a la posteridad como monumentos de gloria. Si hoy se formase un comité de delegados por plenos poderes, de las diferentes naciones panamericanas, con fondos de contribución de las mismas, para que en caso de aparición en cualquiera de ellas de una de esas terribles plagas tales como la peste, fiebre amarilla, tífus exantemático, etc., que siegan en un instante miles de vidas, pudiera esta comisión ejecutiva dictar todas las medidas necesarias al pronto saneamiento, éste inmenso vacío quedaría llenado. Nada sería más factible ni más provechoso; los países que componen las Américas podrían en tiempo normal contribuir sin gravar mucho su presupuesto con una suma anual la que constituiría un total respetable, para ayudar al pueblo hermano que cayera en la desgracia el cual debido a la natural ruina que trae consigo una epidemia, no podría tener los recursos necesarios a su salvación. Proteger entonces a un pueblo agobiado por la epidemia sería no sólo una inmensa obra de caridad sino también una obra de defensa propia. Si hoy aparece la peste bubónica en un puerto de un país inmediatamente se le aísla; los habitantes de los alrededores huyen espantados; y las demás naciones por medio de la cuarentena contribuyen a su mayor aniquilamiento privándolo del pronto auxilio de víveres, médicos y medicinas; los negocios se paralizan y la miseria viene a contribuir a la propagación de la enfermedad. Cuán diferente sería si, en lugar de aislar al pueblo hermano, llegara un comité con poder absoluto compuesto de los hombres de ciencia necesarios y con las manos llenas de oro para vencer las dificultades materiales.

Seguir en el estudio de la higiene y profilaxia, sería entrar en un campo vastísimo que no podría tener cabida en este modesto trabajo; mas, si deberé insistir en la absoluta necesidad de dar mayor incremento a todos los ejercicios al aire libre recordando que "mens sana in corpore sano." Los latinos deberíamos copiar a los americanos del Norte la diversidad de juegos y deportes con que desde niños tratan de desarrollar el cuerpo, dando así, sin duda alguna, mayor vigor al cerebro pensante, así como un árbol de frondoso follaje por donde se nutre, se cubre de abundante fruto.

El deporte no sólo fortalece y vuelve más ágil al cuerpo sino que también distrae al niño de ocupaciones perniciosas que no conducen sino al vicio y a la depravación. Todos estamos de acuerdo en esto; pero, pocos lo ponemos en práctica y encerramos a los niños en lugares confinados obligándolos a respirar aire viciado que empobrece su naturaleza haciéndolos crecer raquíticos y endebles. Me creo obligado a insistir también en que cada establecimiento de enseñanza deba tener un médico director; pero no para curar enfermedades sino para precaverlas. La visita del facultativo en estos establecimientos se reduce hoy día al tratamiento de alguna afección patológica en el alumno o a inspecciones superficiales de higiene para llenar una fórmula. El médico de un establecimiento de esta naturaleza debería examinar niño por niño de una manera absoluta, completa, y prever de esta manera las enfermedades que pudieran esperar al joven estudiante para dictar las prescripciones convenientes.

Todos los médicos tratamos a diario hombres que padecen enfermedades desde su niñez y que han recorrido los colegios de diversos países, donde jamás se prestó la atención debida a sus nacientes afecciones. Jóvenes con lesiones cardiacas que las desarrollan siendo los primeros en los deportes; otros que crecen con deformaciones

debidas a debilidades musculares; quienes con enfermedades contagiosas las esparcen por doquiera que van.

La enseñanza moderna necesita prestar mayor atención a la dirección médica de sus colegios no olvidando que es mejor impedir una enfermedad y no tener que curarla después.

El segundo punto de este trabajo, que comprende el entrelazamiento de los países americanos para el mejor conocimiento de nuestras diferentes lenguas, no podrá existir prácticamente hasta que haya unidad de programa en la enseñanza de los países que forman las Américas. Mientras esta unificación falte no podrá haber reciprocidad en los diplomas; las naciones cuya enseñanza sea más completa no podrán admitir naturalmente títulos de escuelas inferiores, y entonces exámenes de admisión se harían necesarios que no vendrían sino a estorbar el libre intercambio de estudiantes de universidades y colegios de los diferentes países. El verdadero pan-americanismo debe comprender entonces la unificación de enseñanza, tanto preparatoria como profesional, para que las diferentes escuelas puedan conocer fácilmente a los estudiantes que de países extranjeros vayan a buscar las luces de la ciencia. Y ojalá que también arreglos de las diferentes naciones se hiciesen con las compañías de transportes, para acortar de esa manera las distancias ordinariamente demasiado grandes para los recursos siempre exiguos de los estudiantes.

La naturaleza nos da un órgano más o menos apto para la función a que está destinado; pero procurando por una educación adecuada desarrollar este órgano, mejoramos necesariamente la función. Un niño que nace raquítico no podrá ser jamás un atleta como el que ya viene al mundo fuerte; pero si a este niño se le fuerza a un ejercicio muscular metódico toda su vida, llegará a ser indudablemente un hombre relativamente fuerte. Todos nacemos con cerebros más o menos privilegiados pero, si desde un principio se educa con un ejercicio metódico y progresivo de las diferentes facultades, el niño llegará a tener constitución cerebral seguramente superior. Esta educación existe hoy aunque algo rudimentaria. El maestro del porvenir deberá, desde un principio, procurar por todos los medios ir desarrollando de una manera sistemática todas las facultades del niño, y cuando el profesor, después de un estudio profundo, hubiese visto no los deseos sino las aptitudes del discípulo, aconsejarle e indicar a los padres la rama de la ciencia para la que tuviese más facilidades; el gusto del alumno se iría formando cuando sintiese la poca dificultad y la rapidez con que iría progresando en la carrera que se le hubiese trazado. Cuantos cirujanos he visto yo que tomaron esta carrera sólo por simpatía, sin tener en cuenta la torpeza natural de sus manos y que, por consiguiente, trabajando toda su vida nunca pasaron de ser una medianía.

Individuos que no fueron dotados de un oído fino ni quizá de la inteligencia necesaria estudian medicina y así podría multiplicar los ejemplos hasta el infinito. Quizá de estos mediocres se hubiese podido sacar mayor provecho dirigiéndolos hacia otra rama de la ciencia.

Esta educación es tanto más necesaria cuanto que en las grandes ciudades muchas de nuestras facultades primitivas se han perdido; y es evidente que el habitante primitivo de los bosques tenía la facultad de percibir el más débil ruido y podía distinguir el menor objeto en las vastas llanuras. La enseñanza moderna necesita pues estudiar de una manera sistemática las diferentes profesiones, analizarlas en sus más mínimos detalles, buscar cuales son las facultades que sería necesario desarrollar para perfeccionarlas y deducir entonces los medios y métodos para facilitar de una manera científica su desenvolvimiento. Si nos imaginamos por un momento un niño a quien se le hubiese enseñado desde pequeño la taquigrafía y dactilografía, forzándole a hacer desde sus primeros años todos sus deberes de escuela en máquina de escribir la habilidad a que el niño llegaría más tarde sería verdaderamente portentosa. El finísimo tacto de los ciegos de nacimiento demuestra que la perfección es mayor mientras más joven se principia: de ahí que la educación moderna, a nuestro juicio, requiere una

división completa en el plan de estudio y que a cada profesión debería corresponder una educación especial en la que se prepare al niño desde muy pequeño, logrando así que alcance una perfección más grande. Para esto es necesario que él tenga ya una natural aptitud que el profesor cuidará de desarrollar; además sus estudios se deberán dividir en dos partes: una educación general sumamente condensada para que en poco contenga mucho de lo que se necesita saber para aprender bien su profesión, y tener también un conocimiento general de las demás cosas de la vida. Procurando que esto último se haga sintetizando y marcando bien lo muy importante de las demás ramas de la ciencia o artes diversos, para que el niño a la vez que adquiera conocimientos que le servirán para entender su profesión, adorne su vida sin gastar mucho del precioso tiempo que le queda para perfeccionarse en lo que ha de darle su diaria subsistencia.

Para terminar quisiera llamar la atención sobre la absoluta e imperiosa necesidad que existe en acortar el tiempo empleado en leer y escribir y por ende en aprender. El cerebro humano camina sumamente aprisa y elabora seguramente con más rapidez si tenemos un medio rápido de trasladar nuestras impresiones al papel antes de que se confundan; de aquí se deduce que la estenografía debería ser enseñada a los niños desde pequeños para cualquiera que fuese la profesión que escogiera para la lucha por la vida. Se me podría argüir que un carretero, por ejemplo, poco o nada la necesita y que no practicándola quizá la olvidaría, y que por consiguiente no le acarrearía ningún provecho. La misma objeción podría hacerse a la escritura actual que enseñamos al obrero, ya que éste la practica poco o nada. Podrá tener poca rapidez pero jamás la olvida; lo mismo sucedería con la estenografía con la ventaja que tendría un medio más rápido de trasladar sus pensamientos al papel. ¿Por qué no enseñarle entonces un método que acortándole el tiempo de trabajo le traerá seguramente ventajas? Además de estas escrituras se haría general, si los periódicos se escribiesen lo mismo, y la costumbre de practicarla siempre impediría el olvidarla y las ventajas aparecerían con el uso. ¿Podrían Galvani y Volta preveer los múltiples empleos y ventajas de la electricidad cuando sentaron sus principios? El empleo pues de signos, de señales, de cuadros sinópticos, de cinematógrafos instructivos que acortaría el tiempo de instrucción y grabaría mejor un hecho, una historia en nuestra mente, debe ser fomentado por los profesores. Los maestros de esta manera poco a poco irían perfeccionando estos nuevos métodos y los otros que surgieran reduciendo todo nada más que en provecho del alumno; es cierto que ya actualmente empleamos algo de esto para la enseñanza pero no de una manera sistemática como debiera hacerse.

La lectura actualmente de los asuntos que interesan a todos es ya casi imposible para un profesional medianamente ocupado y aun más lo que se escribe en el mundo referente a su profesión es demasiado para que tenga el tiempo de enterarse de ello de una manera completa.

Si de una manera sistemática procuráramos disminuir el tiempo material empleado en el acto de leer, sin disminuir, bien entendido, la claridad, necesaria para la comprensión del libro o periódico, habremos obtenido seguramente una gran ventaja. Algunos libros didácticos ya principian, trayendo un resumen de cada capítulo que recorrido puede dar una idea de lo que trata y así de esta manera un individuo puede enterarse de un libro sin tener que recorrer perdiendo tiempo en una serie de palabras muchas veces no necesarias para la claridad del escrito. Un ejemplo tan solo podría explicar muy bien la idea entera que he pretendido desarrollar en estas líneas: Un niño por nacimiento es hábil en el uso de sus manos, es observador e inteligente, sus padres tienen los medios de educarlo y el profesor lo dirige hacia la medicina, ¿Cuáles son las cualidades que requiere un hombre para ser cirujano? Debe ser inteligente, tener memoria, buen oído, sangre fría y una gran habilidad manual. Si existiese una escuela donde se preparase desde pequeño el joven cirujano se principiaría por enseñarle rápidamente y de una manera compendiada las diferentes

ciencias y artes que tienen relación con la medicina y de una manera rápida también las materias que sirven de adorno y que dan el grado de cultura necesaria que pone en el nivel social que debe ocupar el profesional. Se procuraría desde un principio formarle el alma de cirujano obligándole a dominar sus emociones, enseñándole la calma en los peligros, fomentándole la caridad y el amor hacia sus semejantes que sufren; después se le educarían los sentidos necesarios, procurando afinarle el oído para que logre percibir la más pequeña diferencia en los sonidos y se le enseñaría también la manera de educar el tacto obligándole a adquirir, por medio de movimientos metódicos de los dedos, la habilidad que más tarde necesitará para manejar el bisturí con rapidez. La estenografía le serviría para tomar sus cursos sin perder ese larguísimo tiempo que todos hemos perdido escribiendo la sabia palabra de nuestros maestros; los cinematógrafos le enseñarían los diferentes tiempos operatorios y un periódico compendiado le tendría al corriente de lo que se escribiera referente a su profesión en el mundo entero. Las planchas murales de anatomía, continuamente enfrente de sus ojos en los dormitorios y refectorios, lo forzarían quisiera o no a detener en su memoria lo que constituye la base de su ciencia; los fonógrafos le evitarían cansarse los ojos leyendo y releendo tantas veces como son necesarias para no olvidar los miles de nombres que se necesitan para el conocimiento del cuerpo humano.

CONCLUSIONES.

Primero. La enseñanza profesional deberá dividirse en secciones desde un principio, facilitando así la especialización;

Segundo. Debe procurarse compendiar de una manera clara las ciencias o artes secundarias para la profesión, y

Tercero. Utilizar todos los métodos necesarios para abreviar el tiempo de lectura y escritura.

EL MÉTODO EN LA CIENCIA PEDAGÓGICA.

Por LUIS ARCE LACAZE,

Ex-Rector de la Universidad de Chuquisaca, Bolivia.

La cuestión capital en todas las ciencias es la del método, y aun para la filosofía las grandes etapas han sido las de las innovaciones en el método.

¿Por qué la obra de casi todos los grandes pedagogos de la historia ha sido principalmente crítica y de censura a la pedagogía imperante en cada época? ¿Y por qué hoy mismo es la actitud crítica la que predomina en casi todos los pedagogos notables? La contestación es sencilla y cualquiera puede darla. Es porque carece de base científica, y esto no solamente porque la ética, la psicología y la sociología, que deben suministrarle esa base, se hallen aún en estado embrionario, sino también porque el método empleado en la investigación pedagógica es deficiente.

Con este pensamiento ya, al inaugurar el año escolar de la Universidad de Chuquisaca, decía:

Una de mis convicciones más profundas es la de que a la pedagogía le falta un estudio previo. Como todos los conceptos se forman en virtud de relaciones y de oposiciones, ninguna cosa es bien conocida si no es conocida al mismo tiempo su contraria. Lo grande no existe sino por oposición a lo pequeño, lo claro por oposición a lo oscuro, lo bueno por oposición a lo malo. Por eso, es en mi concepto una falta de método la principal causa de las actuales vaguedades de la ciencia pedagógica, verdadera nebulosa que tardará mucho aún en organizarse. La educación es una finalidad, una afirmación de algo, y existe de hecho la finalidad contraria, la negación, no sólo pasiva, sino activa de la teleología pedagógica. Hemos estudiado desde Platón, cuya filosofía es casi toda pedagógica, desde Jenofonte e Isócrates, el ideal educativo, el fin que debe proponerse y los medios que deben emplearse. Todo ha sido estudio

de ideas, pero no de hechos. Por eso nuestro tiempo reacciona contra toda la pedagogía tradicional, a la que considera con relación a la pedagogía científica, como una alquimia respecto a la química. Lo que se necesita estudiar son los hechos, lo que se da en la vida ordinaria. Y eso es una realidad demasiado lejana del ideal pedagógico y aun opuesta casi siempre a él. Lo que se da en la vida práctica aun hoy día, lo que cada uno no deja de reconocer, es que, aun en la educación de los más privilegiados, una gran parte de los actos que tienden a educar, si no la mayor parte de ellos, tienden a lo contrario, es decir a deseducar, son antipedagógicos, dejan algún daño. Si esto sucede en la educación que consideramos bien dirigida, en las grandes masas de la población el desacierto es más constante, es lo ordinario. Esta realidad, la educación antipedagógica, es lo que se necesita estudiar; ese es el hecho que no se halla analizado. Es necesario hacer una historia natural de la deseducación, describirla y analizarla, reconocer sus factores y clasificarlos, investigar sus causas eficientes y determinantes y su medio ambiente propio, hacer su etiología y terminar su estudio con el método de las ciencias médicas, investigando su patogenia, su profilaxis, su higiene y su terapéutica. Ese estudio positivo y de hechos, previo para la pedagogía, no ha sido aun formulado por nadie.

Todos los pedagogos notables han insistido, con dolorosas y sentidas frases, en críticas acerbas contra la pedagogía imperante. Es como declamar contra la fiebre o hacer sortilegios contra la peste. * * * Nadie ha cumplido hasta hoy ese anhelo explícito de Rousseau, de hacer un verdadero estudio de lo que en la educación se debe evitar.

Y en otro discurso decía en enero del año pasado:

Lo que llamamos el destino no es otra cosa que los errores o los aciertos en el conjunto enorme de las influencias educadoras o deseducadoras, para cuyo conocimiento la humanidad es demasiado ignorante y ciega todavía. * * * Con excepciones escasas de círculos sociales muy cultos y privilegiados, todos los demás, la gran masa humana somos, aun en nuestro tiempo, más deseducadores que educadores. La obra educativa sigue siendo en gran medida perturbadora, dolorosa y aun de estrago. Padres y maestros, institutos docentes y ambiente social hacen todavía, sin pensarlo y sin saberlo, obra contraproducente y de deformación, obra deseducadora, que en vez de alumbrar, dar placidez y dicha al alma humana y de sembrar beneficios para el curso de la vida, produce amputaciones morales, disolución del carácter, desadaptaciones y, podría decirse, obra teratológica, que después nuestra incipiente ciencia nos hace atribuir al destino. Los deseducadores, más o menos perniciosos, y terribles algunas veces, son legión inmensa. Ante ese deterioro intelectual y moral producido por la pretendida obra educativa, más o menos inconsciente, lo que va imponiéndose ya hoy día, muchas veces como remedio tardío, es una obra compleja de reeducación.

Otra observación que debe hacerse es la de que casi todos los grandes pedagogos no han hecho sino estudios incompletos, observaciones sueltas, monografías pedagógicas parciales y en general, estudios que no han pretendido llamarlos completos, ni han merecido para sus mismos autores más importancia que la de simples apuntes pedagógicos. Ni aun los mismos autores de los tratados en que parece agotarse la materia como Locke, Herbart, Ziller, Spencer, Bain y, últimamente, Cellérier y Barth, han llegado en realidad a presentar un cuadro completo de la pedagogía. Para mayor abundamiento, debemos observar que ni aun los programas de pedagogía de las escuelas normales abarcan en nuestro concepto la plenitud de la materia que debe estudiarse en la pedagogía.

Procurando abreviar nuestra exposición, formularemos el que conceptuamos plan completo de la ciencia pedagógica.

1. En el grado actual de progreso de la pedagogía es ya posible determinar con precisión cuáles son los fines educacionales y qué es lo contrario a esos fines. Como en la práctica hay muchos modos de equivocarse y uno sólo de acertar, resulta que todos los hombres sufren influencias funestas en su educación, las cuales contribuyen poderosamente a mantener todas las taras y defectos de la civilización actual; a dar una agudeza, creciente a los problemas sociales y económicos; a mantener la ineficacia de la religión y de la moral faica en el combate contra la inmoralidad, el vicio, la criminalidad y la ruina de las familias; a conservar como una llaga incurable el pauperismo; a conservar en muchos pueblos una clase social, como la indígena en los pueblos americanos,

que se mantiene en estado verdadero de ilotismo o de esclavitud, porque no quiere aprender a hacer uso de sus derechos, y en fin, contribuyen esos errores pedagógicos tal vez a la mayor parte del mal que aqueja a la civilización contemporánea. El estudio de los errores educacionales, de lo antipedagógico, de la deseducación, en una palabra, es en nuestro concepto el más importante, es una veta que no ha sido explotada por la ciencia. Si el análisis ha podido descomponer y clasificar elementos, como lo han hecho la química, por una parte, la filología, en otro género de hechos, la música, desde otro punto de vista del análisis, ¿por qué no será posible analizar y clasificar toda esa enorme masa de hechos, que se nos presenta homogénea, incoherente e indefinida, hechos análogos en mucho a los que la patología ha llegado a clasificar? Todo lo que llamamos deseducación, es una patología moral y una patología social, que puede ser luminosamente estudiada, y que presenta en la vida real clases y géneros, familias de hechos y casos teratológicos, que pueden y deben agruparse en la primera parte de la ciencia de la educación, y que deben servir de base, base objetiva, de observación y experimental de toda la pedagogía. Empleando el método de las ciencias médicas, debemos tener una patogenia, una profilaxis, una higiene y una terapéutica de la deseducación. Y esta parte de la pedagogía es en realidad la única que debe estudiarse y es urgente que se estudie en todos los establecimientos de enseñanza. Deben estudiarse sobre todo los factores de la deseducación: El sujeto; el medio, y el educador, haciendo una psicología de ellos y una clasificación lo más completa que sea posible.

2. Esta segunda parte debe ser la que hasta ahora llamamos propiamente pedagogía, es decir, la teoría de la educación. En ella, como hemos dicho, encontramos que las exposiciones más completas son las de Pablo Barth y Luciano Cellérier.

3. Esta última parte debe comprender todos los estudios que se hacen sobre los niños retrasados, todo lo que hoy ya preocupa altamente en muchos países bajo el nombre de reeducación.

Así la pedagogía comprende tres partes: la deseducación, la educación y la reeducación. Y sólomente cuando se haga un cuerpo de doctrina de la primera, las restantes podrán tener una base experimental y científica.

Por eso, nos permitimos pedir al ilustre Congreso Científico Panamericano un voto por el que se recomiende el estudio de la que hemos llamado primera parte de la pedagogía: la deseducación, o sea todo el conjunto complejo de los hechos antipedagógicos. Esperamos que este voto, por lo menos dará el beneficio de poner en discusión la necesidad de este estudio, con lo que el congreso no habrá dejado de prestar un positivo servicio.

NOTICIA SYNTHETICA DO ENSINO NO ESTADO DE SÃO PAULO.

Por TIBURTINO MONDIN PESTANA,

Sub-director de la Secretaria de Estado de Commercio Interior do Estado de São Paulo, Brasil.

ENSINO PRIMARIO.

No Estado de São Paulo o ensino primario é obrigatorio e gratuito, ou mais do que isto; pois o Governo põe á disposição dos alumnos das escolas publicas tudo quanto é necessario para sua instrucção.

A unica exigencia indispensavel á admissão escolar é: idade entre 7 e 16 annos, prova de ser vaccinado ou revaccinado e de não padecer molestia contagiosa ou repugnante.

Para o Jardim da Infancia, annexo á Escola Normal da Capital e destinado a preparar, pela educação dos sentidos, segundo os processos de Froebel, alumnos de ambos

os sexos, que se destinam á escola modelo preliminar, exigem-se as mesmas condições, menos quanto á idade, que deve ser de 3 a 7 annos.

Durante o anno de 1914 o ensino primario foi ministrado por 27 grupos escolares, na capital, com a matricula de 25,179 alumnos e a frequencia de 20,959; por 120 grupos no interior, com a matricula de 64,545 alumnos e a frequencia de 50,950; por 173 escolas isoladas, na capital, com a frequencia de 7,538 alumnos; e 1,039 no interior, com a frequencia de 36,168.

Funcionaram tambem 11 escolas reunidas com a matricula de 2,329 e frequencia de 1,325.

O programma de ensino das escolas isoladas é mais limitado do que o dos grupos e das escolas reunidas. Comprehende tres secções com as seguintes materias: Leitura, linguagem, arithmetica, geographia, historia patria, noções geraes de sciencias naturaes, escripta, desenho, canto, trabalho manual, gymnastica.

O programma dos grupos escolares desenvolve-se em quatro annos com as seguintes materias: Leitura, linguagem oral e escripta, arithmetica, geometria, sciencias physicas e naturaes, hygiene, geographia e cosmographia, historia patria, educação moral e civica, calligraphia, desenho, musica, trabalhos manuaes, gymnastica e exercicios militares.

Attendendo, quanto possivel, ás condições e necessidades das diversas zonas do Estado, vai-se introduzindo nos grupos o habito de serem ministradas lições praticas de agricultura, exercitando-se a secção masculina em pequenos campos de experiencia nas proprias areas de recreio ou em terrenos annexos, e a secção feminina em trabalhos de jardinagem.

Em exames trimensaes, verificam os directores dos grupos o aproveitamento das classes, por meio de provas graphicas e oraes.

Não podendo o Governo criar grupos senão nas sédes de municipio, permittiu que nos bairros populosos, onde houvesse mais de quatro escolas isoladas, funccionassem estas em um só predio, obedecendo em sua organização, disciplina e methodos de ensino ao regimen dos grupos escolares.

Assim se fundaram os institutos chamados escolas reunidas.

Em 1914 funccionavam 11 com a matricula de 2,329 e a frequencia de 1,325 alumnos.

O Jardim da Infancia não se preoccupa com o ensino da leitura ou da escripta; não tem o escopo de instruir, mas o de educar.

Promove o desenvolvimento dos sentidos, estimula a attenção e a vontade por meio das construcções e dos jogos; leva as crianças a observações, a comparações e prepara-as, enfim, para as aulas primarias.

Seu curso é de tres annos.

Além do material necessario ao regular funcionamento de cada escola, do mobiliario (unipessoal ou bipessoal), modelado de sorte a facilitar a inspecção, individuar a responsabilidade do alumno e satisfazer os preceitos hygienicos, fornece o almoxarifado da instrucção publica, gratuitamente ás escolas, á requisição da Directoria Geral: papel, pennas, tinta, lapis, livros didacticos, etc.

Os predios em que funcionam os grupos, de propriedade do Estado, não obedecem ao mesmo typo architectonico; adaptam-se, porém, ás condições e necessidades locais. Subordinam-se sempre ás prescripções hygienicas e pedagogicas e são dotados de amplas salas, convenientemente illuminadas e arejadas, cujas paredes azuladas ou verde-claras, cintadas de larga faixa negra, de cimento, permitem ao professor, em qualquer ponto da classe, illustrar ás suas lições graphicamente.

Além das escolas referidas mantém o Estado escolas nocturnas para adultos, e nas proximidades das fabricas ou grandes officinas, escolas que funcionam das 18½ ás 21 horas e são frequentadas por filhos de operarios.

As escolas de adultos attendem mais directamente ao preparo para as luctas da vida e dão noções de immediata utilidade pratica.

São as escolas nocturnas na capital e no interior em numero de 103.

Para a pratica de ensino dos alumnos das escolas normaes, annexas a estas, funcionam escolas-modelo, quer do typo dos grupos, quer das escolas isoladas, subordinadas ao director da respectiva escola normal.

Funcionam tambem no Estado 142 escolas municipaes, 64 escolas subvencionadas pelos poderes publicos e 205 escolas particulares.

ENSINO SECUNDARIO.

Mantém o Estado com o fim de ministrar o ensino secundario tres gymnasios: um na Capital, um em Campinas e outro em Ribeirão Preto.

O curso de estudos destes estabelecimentos comprehende as seguintes materias: Portuguez, litteratura, francez, inglez, italiano, allemão, latim, grego, mathematica elementar, elementos de mechanica e astronomia, elementos de physica e chimica, elementos de historia natural, comprehendendo noções de anthropologia, geographia e cosmographia, historia do Brasil, historia universal, psychologia e logica, desenho, gymnastica e exercicios militares.

Funcionam taes estabelecimentos em predios apropriados, dispondo de vastas salas mobiliadas, de cartaeiras unipessoas aperfeicoadas. São providos de material e apparatus exigiveis ao bom ensino. Dispõem de bem montados museus de historia natural, gabinetes e laboratorios de physica e chimica, bibliothecas, que todos os annos se enriquecem com alguns centos de novos volumes de obras escolhidas.

Obedecendo á determinação de lei federal ministram os gymnasios exercicios militares e gymnasticos para o que dispõem de armamento e apparatus.

Promovem os alumnos approvados no sexto anno, mesmo os dispensados dos exames facultativos, para as escolas superiores estadoaes, conferindo o título de bacharel em sciencias e letras somente aos que fazem o curso completo.

Podem tambem os gymnasianos obter nomeação de professor para qualquer escola primaria, submettendo-se a exame das materias do curso normal que lhes faltam no gymnasio e fazendo seis mezes de pratica de ensino em grupo escolar ou escola-modelo.

O corpo docente é constituído de 17 lentes, nomeados por concurso e de 2 mestres contractados para dar aulas de gymnastica e desenho, sendo o ensino theorico e pratico.

Os gymnasios são frequentados por alumnos de ambos os sexos.

A matricula geral foi, em 1914, a seguinte: Capital 336, Campinas 202, e Ribeirão Preto 162.

Além dos gymnasios officiaes ha no Estado grande numero de estabelecimentos de ensino secundario privado, cujos programmas são approximadamente identicos aos destes; como: o Gymnasio de São Bento, Gymnasio Macedo Soares, Gymnasio Archidiocesano, Gymnasio Anglo-Brasileiro, Mackenzie College, Gymnasio Nossa Senhora do Carmo, Gymnasio Luzitano e Instituto Sciencias e Letras, na Capital; Instituto Cezario Motta, em Campinas; Gymnasio Hydecroft, em Jundiaby; Collegio de São Luiz, em Itu; Gymnasio de São Joaquim, em Lorena; Gymnasio Jorge Tibiriçá, em Jahú; Gymnasio Santista, em Santos; Collegio Amparo, na cidade do mesmo nome; e Collegio Diocesano de São José, em Batataes.

ENSINO SUPERIOR.

O ensino superior é ministrado no Estado pela tradicional Academia de Direito, instituto federal fundado em 11 de agosto de 1827; pela Escola Polytechnica, installada em 15 de fevereiro de 1894; pela Faculdade de Medicina, inaugurada em 4 de abril de 1913; pela Faculdade Livre de Philosophia e Letras, fundada pelo Mosteiro de São Bento, aberta a 15 de julho de 1908 e agregada á Universidade de Louvain (Belgica); e pela Universidade de São Paulo, instituto de iniciativa particular, fundada em 1911.

A Polytechnica é uma escola bem organizada, provida de completos gabinetes, laboratorios e museus, proficientemente dirigida e que dispõe de illustrado corpo docente, escolhido entre os mais distinctos lentes nas respectivas especialidades.

Seu programma abrange dois cursos fundamentaes e dois geraes com as seguintes especialidades:

- I. Curso de engenheiros civis.
- II. Curso de engenheiros architectos.
- III. Curso de engenheiros industriaes.
- IV. Curso de engenheiros agronomos.

Outro curso prepara: (a) Mecanicos; (b) agrimensores; (c) conductores; (d) machinistas; (e) contadores.

Pela reforma de 1897 foi criado o curso especial de electricistas.

Em 1914 achavam-se matriculados nesta escola 260 alumnos.

A Faculdade de Medicina e Cirurgia tem um curso preliminar de um anno e um curso geral de cinco annos, comprehendendo o ensino das seguintes materias:

CURSO PRELIMINAR.

Primeira cadeira: Physica medica; segunda cadeira: Chimica medica; terceira cadeira: Historia natural medica.

CURSO GERAL.

Primeiro anno.

Primeira cadeira: Anatomia descriptiva (primeira parte).

Segunda cadeira: Physiologia (primeira parte).

Terceira cadeira: Pharmacologia e materia medica.

Segundo anno.

Primeira cadeira: Anatomia descriptiva (segunda parte).

Segunda cadeira: Physiologia (segunda parte).

Terceira cadeira: Histologia.

Quarta cadeira: Clinica dermatologica e syphiligraphica.

Quinta cadeira: Clinica ortho-rhino-laryngologica.

Terceiro anno.

Primeira cadeira: Microbiologia.

Segunda cadeira: Anatomia e histologia pathologicas.

Terceira cadeira: Anatomia medico-cirurgica. Operações e apparatus.

Quarta cadeira: Clinica medica (primeira cadeira), pathologia interna.

Quinta cadeira: Clinica cirurgica (primeira cadeira), pathologia externa.

Sexta cadeira: Clinica opthalmologica.

Quarto anno.

Primeira cadeira: Pathologia geral e experimental.

Segunda cadeira: Therapeutica experimental e clinica. Arte de formular.

Terceira cadeira: Clinica medica (segunda cadeira).

Quarta cadeira: Clinica cirurgica (segunda cadeira).

Quinta cadeira: Clinica obstetrica.

Sexta cadeira: Clinica pediatrica; puericultura.

Quinto anno.

Primeira cadeira: Hygiene.

Segunda cadeira: Medicina legal.

Terceira cadeira: Clinica medica (terceira cadeira), historia da medicina.

Quarta cadeira: Clinica gynecologica.

Quinta cadeira: Clinica psychiatrica e de molestias nervosas.

As clinicas são divididas em obrigatorias e facultativas.

O corpo docente da Faculdade, cujos membros são todos medicos compõe-se de 26 lentes cathedaticos, 8 lentes substitutos, 15 preparadores, e 12 assistentes.

Os lentes substitutos têm a seu cargo respectivamente as secções seguintes:

Primeira secção: Physica e historia natural.

Segunda secção: Chimica medica, pharmacologia, therapeutica.

Terceira secção: Anatomia descriptiva, anatomia topographica.

Quarta secção: Histologia, microbiologia, anatomia e histologia pathologica.

Quinta secção: Hygiene, medicina legal.

Sexta secção: Pathologia geral, physiologia.

Setima secção: Clinica cirurgica (primeira e segunda cadeiras).

Oitava secção: Clinica medica, historia da medicina (primeira, segunda e terceira cadeiras).

Em 1914 matricularam-se no anno preliminar dessa escola 101 alumnos, dos quais 52 foram promovidos para o primeiro anno do curso geral.

ENSINO PROFISSIONAL.

ESCOLAS PROFISSIONAES.

Em 28 de Setembro de 1911 foram creadas as escolas profissionaes da Capital, destinadas ao ensino de artes e officios a alumnos do sexo masculino, e de economia domestica e prendas manuaes ao sexo feminino.

O ensino pratico é dado nas officinas e distribuido em graus ou classes a que os alumnos pertençam, conforme sua applicação e intelligencia.

A Escola Profissional Masculina comprehende as secções seguintes: (a) De mathematicas; (b) de desenho; (c) de mecanicos (ferreiros, fundidores e ajustadores); (d) de pintores; (e) de pedreiros; (f) de tecelões; (g) de latoeiros; (h) de chauffeurs.

A Escola Profissional Feminina comprehende as secções seguintes: (a) De desenho; (b) de dactylographia; (c) córte e feitio de vestidos e roupas para senhoras e creanças; (d) de córte e feitio de roupas brancas; (e) de bordados e rendas; (f) de fabrico de flores e ornamentação de chapéus; (g) de arte culinaria em todos os seus ramos e de economia domestica.

Do producto das obras realizadas nas escolas, descontado o custo do material empregado, reverte uma parte correspondente a 50 % em favor do alumno ou alumnos que tenham executado o trabalho.

Nas officinas, como a de cosinha e outras, em que se não possa avaliar com precisão o trabalho de cada alumno, a porcentagem é dividida com egualdade entre todos elles. As escolas podem encarregar-se de trabalhos para particulares, desde que não seja prejudicado o funcionamento das officinas.

Cada alumno recebe uma caderneta em que é creditada a porcentagem que lhe coube pelos trabalhos executados.

Perde o direito ao premio o alumno que for expulso da Escola.

Na Escola Profissional Masculina têm os alumnos (exeptuados os da secção de chauffeurs) uma retribuição pecuniaria segundo a tabella approvada pelo Secretario do Interior.

Só têm direito a essa retribuição os alumnos que tenham boas notas depois de dois mezes de estudos.

A importancia dessa retribuição é entregue mensalmente, mediante recibo, aos alumnos ou aos seus representantes.

A matricula inicial da Escola Profissional Masculina foi, em 1914, de 809 alumnos e na Feminina, de 285 alumnas, havendo sido recusados outros candidatos por falta de lugares.

Existe tambem no interior a Escola de Artes e Officios de Amparo, sujeita ao mesmo regimen, com as seguintes secções: Mathematicas, desenho, electricistas, pintores, carpinteiros e marceneiros, correiros, mecanicos. Nesta escola foi, em 1914, a matricula de 103 alumnos.

ESCOLAS NORMAES.

Funcionam no Estado 3 escolas normaes de curso secundario e 8 primarias.

As escolas normaes são estabelecimentos de ensino profissional, destinados a dar aos candidatos á carreira do magisterio a educação intellectual, moral e pratica necessaria ao bom desempenho de professor.

Para formar os professores das escolas normaes e dos gymnasios ha, annexo á escola normal da Capital, um curso superior.

As materias de que consta o curso das escolas normaes primarias são divididas em dois grupos e assim distribuidas:

Primeiro grupo.—Sciencias e linguas, abrangendo as seguintes cadeiras: 1ª, portuguez; 2ª, francez; 3ª, arithmetica, algebra e geometria, 4ª, geographia geral e do Brasil, historia da civilização e do Brasil; 5ª, noções de physica, chimica e historia natural com applicação á agricultura e á zootechnia; 6ª, pedagogia e educação civica.

Segundo grupo.—Abrangendo as seguintes disciplinas: 1ª, musica; 2ª, calligraphia e desenho; 3ª, Trabalhos manuaes e economia domestica para o sexo feminino; 4ª, trabalhos manuaes para o sexo masculino; 5ª, gymnastica para ambos os sexos.

O ensino normal primario é facultado a ambos os sexos, separadamente, em um curso de 4 annos.

O curso das escolas normaes secundarias é de 4 annos e facultado a alumnos de ambos os sexos, separadamente.

As materias de ensino são as seguintes: Portuguez, historia da lingua e latim, francez, inglez, arithmetica, algebra, geometria e trigonometria, mechanica, physica e chimica, historia natural, anatomia, physiologia e noções de hygiene, geographia e astronomia, historia, pedagogia e educação civica, musica, escripturação mercantil, calligraphia e desenho, gymnastica e trabalhos manuaes.

Ha tambem na escola normal secundaria da capital aulas de dactylographia e stenographia.

O curso superior annexo á escola normal da Capital, é de dois annos e dividido em duas secções, uma scientifica e outra litteraria.

Consta a secção scientifica das seguintes materias: Revisão e complemento de mathematica, comprehendendo: geometria especial (theoria das curvas); trigonometria, partes elementares da geometria analytica de duas e de tres dimensões. Revisão e complemento de mecanica, escripturação mercantil, topographia, revisão e complemento de sciencias physicas, chemicas e naturaes e de desenho.

Consta a secção litteraria das seguintes materias: Lingua e litteratura portugueza, franceza, ingleza e allemã; continuação do estudo do inglez e do allemão; grammatica comparada; grego e latim; historia da civilização e lições de historia da arte; exercicios de historia e geographia geral, economica e politica.

Na escola normal da capital foi concluido o curso de psychologia experimental, applicado á pedagogia professado pelo Dr. Ugo Pizzoli, da Universidade de Modena (Italia), para tal fim contractado pelo Governo do Estado.

O movimento da matricula nas escolas normaes e o numero de alumnos diplomados no anno de 1914, foi o seguinte:

1. Escola secundaria da capital—Matricula geral: Sexo masculino, 150; sexo feminino, 617; alumnos diplomados, 238.

2. Escola de Itapetininga—Matricula geral: Sexo masculino, 103; sexo feminino, 146; alumnos diplomados, 34.

3. Escola de São Carlos—Matricula geral: Sexo masculino, 45; sexo feminino, 162; alumnos diplomados, 34.

4. Escola normal primaria annexa á secundaria da capital—Matricula geral: Sexo masculino, 109; sexo feminino, 543; alumnos diplomados, 136.

5. Escola Normal de Campinas—Matricula geral: Sexo masculino, 109; sexo feminino, 291; alumnos diplomados, 57.

6. Escola Normal de Piracicaba—Matricula geral: Sexo masculino, 126; sexo feminino, 223; alumnos diplomados, 66.
7. Escola Normal de Guaratinguetá—Matricula geral: Sexo masculino, 119; sexo feminino, 189; alumnos diplomados, 37.
8. Escola Normal de Botucatu—Matricula geral: Sexo masculino, 72; sexo feminino, 168; alumnos diplomados, 28.
9. Escola Normal de Pirassununga—Matricula geral: Sexo masculino, 110; sexo feminino, 195; alumnos diplomados, 35.
10. Escola Normal de Casa Branca—Matricula geral: Sexo masculino, 58; sexo feminino, 106.
11. Escola Normal do Braz—Matricula geral: Sexo feminino, 233.

SEMINARIO DAS EDUCANDAS.

Data de 1825, é confiado á direcção das Religiosas " Irmans de São José", desde 1870. A principio se destinou a dar abrigo e educação a orphãs filhas de antigos servidores da patria; mais tarde, como favor do Governo, ahi foram recebidas filhas de paes pauperrimos, dando-se-lhes preparo para os misteres da vida domestica. Comprehende hoje curso elementar e secundario.

LYCEU DE ARTES E OFFICIOS.

Tem curso primario e secundario, contando as seguintes aulas e officinas: de desenho e pintura, carpintaria e marcenaria, entalhe, modelagem, estatuaria.

Seu curso primario é approximadamente o dos grupos escolares; o secundario, porem, é inferior ao dos gymnasios em numero de materias.

É instituto de iniciativa particular, tem tido, porém tão grande desenvolvimento, que já possui um magnifico predio, onde provisoriamente está funcionando o gymnasio de S. Paulo.

Attento aos relevantes serviços que ha longos annos vem prestando á mocidade estudiosa, o Governo lhe tem concedido annualmente elevado auxilio pecuniario.

LYCEU DE ARTES E OFFICIOS DO SAGRADO CORAÇÃO DE JESUS.

Funciona em predio proprio. Mantém curso primario, profissional, technico e commercial.

Destina-se a receber os filhos da classe operaria, de preferencia orphãos, proporcionando-lhes educação intellectual, moral, religiosa, artistica e industrial.

Sua fundação é devida á iniciativa das Conferencias de S. Vicente de Paulo e data de 1881. Sua direcção está a cargo dos R. R. P. P. Salesi.

INSTITUTO D. ANNA ROSA.

Fundado em 1874 pelo Barão de Souza Queiróz, é mantido pela Associação Protectora da Infancia Desvalida, a cargo da propria familia Souza Queiróz.

Mantém curso profissional e literario.

O curso profissional consta de officinas de mechanicos, marceneiros, alfaiates e sapateiros.

O curso literario consta de portuguez, arithmetica, geometria, geographia, historia e orographia do Brasil, desenho linear e noções de cousas,

CONSERVATORIO DRAMATICO E MUSICAL.

Fundado por iniciativa do Dr. Pedro A. Gomes Cardim, foi inaugurado em 1º de março de 1906.

O curso dramatico é feito em quatro annos, sendo o ultimo de aperfeiçoamento; versa sobre: portuguez, arithmetica, francez, italiano, geographia, historia do theatro, literatura e poetica, esthetica e psychologia, representação collectiva e esgrima.

O curso musical divide-se em: Geral, de musica, e especial, de cantos e instrumentos; comprehende, sete annos de ensino preliminar e seis de ensino superior.

Sua matricula tem sido superior a 200 alumnos de ambos os sexos.

ESCOLA DE PHARMACIA E ODONTOLOGIA.

Foi fundada em 1898 por iniciativa particular de medicos e pharmaceuticos.

A escola mantem os cursos de pharmacia e odontologia. Dispõe de boa bibliotheca, gabinetes, laboratorios, fazendo no que é applicavel servirem as projecções luminosas para illustrar as lições. Seu curso é theorico e pratico e feito em tres annos, além do curso de preparatorio annexo á mesma escola cujas aulas se extendem tambem por tres annos.

ESCOLA DE COMMERCIO ALVARES PENTEADO.

Fundada em 1902 por iniciativa particular, funciona em magnifico predio doado pelo Conde de Alvares Penteado.

O curso da escola comprehende tres secções: preliminar, geral e superior. O primeiro corresponde ao programma das escolas primarias.

O curso geral de 3 annos versa sobre as seguintes materias: Portuguez, francez, inglez, arithmetica, algebra e geometria, geographia, historia geral e especialmente do Brasil, contabilidade mercantil, physica, chimica e historia natural, calligraphia, desenho e stenographia, noções de direito constitucional, civil e commercial.

O curso superior é de dois annos, comprehendendo: Geographia commercial e estatistica; historia do commercio e da industria; contabilidade comparada e banco modelo; noções de direito commercial e maritimo; italiano, noções de economia politica, finanças e contabilidade do Estado; noções de direito internacional; diplomacia, historia dos tratados e correspondencia diplomatica; mathematica applicada e technologia industrial; allemão; hespanhol.

Seu fim é preparar os que se destinam ás profissões de commerciantes, interpretes, guarda-livros, correctores, agentes consulares.

Ha no interior outras escolas do mesmo genero, embora com programmas menos sumptuosos, ex.: a Academia do Commercio, de Santos; Escola de Commercio, de Campinas.

MACKENZIE COLLEGE.

Com justo titulo deve tambem figurar entre as escolas profissionais, pois alem do curso de letras e de sciencias, em geral, tem o curso de engenharia e o commercial.

Os titulos desse estabelecimento são validos nas Universidades norte-americanas.

ESCOLA AGRICOLA LUZ DE QUEIRÒZ.

É o mais completo instituto de ensino agricola do Estado. Funciona em a Fazenda S. João da Montanha a tres kilometros da pitoresca cidade de Piracicaba.

Tem por fim dar aos seus alumnos preparo de agronomia e industrias agricolas que os habilite á exploração racional e economica do sólo e das industrias ruraes.

Seu programma theorico e pratico, mas sobretudo experimental-demonstrativo se desenvolve em quatro annos, sendo o primeiro anno preliminar e os outros tres os do curso regular.

O curso preliminar consta de portuguez, francez, arithmetica, algebra elementar, geometria, geographia, historia do Brasil e trabalhos praticos na carpintaria e na fazenda.

O curso regular comprehende, primeiro anno: Algebra, geometria, trigonometria, noções de mecanica e physica, chimica geral, mineral e organica, mineralogia, botanica, zoologia, physiologia e taxonomia vegetaes, desenho e carpintaria, trabalhos na fazenda, exercicios militares; segundo anno: Physica, chimica agricola, microbiologia, geologia agricola e preparo do sólo, producção e melhoramento das raças, agri-mensura; climatologia agricola, phytopathologia e entomologia, generalidades sobre

culturas, zootecnia especial dos equideos, bovideos, etc.; terceiro anno: Industrias agricolas, colheitas (machinas de colheita) culturas especiaes, silvicultura, alimentação dos animaes, avicultura, horticultura, pomologia, mecanica agricola, motores animaes, a vapor, hydraulicos; economia politica, economia rural, zootecnia especial e veterinaria, apicultura, construcções ruraes, estradas, drenagem e irrigação, trabalhos praticos na leitaria, na fazenda, etc.

As lições theoreticas e praticas são diarias e duram uma hora; os trabalhos praticos são igualmente diarios, feitos nas diversas secções e dependencias da escola e duram no minimo duas horas para cada disciplina.

A escola está situada em uma fazenda modelo de cerca de 200 hectares, com campos de experiencias e demonstrações, parque, horto, pomar, prados e pastagens, cafezal, cannavial, pequena matta para estudos de silvicultura, e terrenos para outras culturas; com um posto zootecnico convenientemente installado; gabinetes e laboratorios; museu, machinas e aparelhos agricolas necessarios ao preparo e amanho do sólo, colheita e beneficio dos productos, officinas, usinas, depositos, etc.

Ha no Estado diversos postos zootecnicos, occorrendo-nos citar na Capital, em São Carlos, Itapetininga e Batataes e diversos postos de selecção de gado vacum e cavallar.

O Estado tem instituido aprendizados agricolas em Iguape, S. Sebastião, Araras e Pindamonhangaba e estabelecido diversos campos de experiencia por meio dos quaes comprehenderão os lavradores não só as grandes vantagens da polycultura, mas tambem a alta conveniencia do emprego de machinas agricolas.

INSTITUTO DISCIPLINAR.

Esta instituição tem prestado os mais relevantes serviços, graças á moderna orientação que lhe foi dada.

O Instituto Disciplinar abriga algumas centenas de menores, que completado o curso, soffrem tão benefica influencia da acção educativa, que se tornam factores do progresso social, pelo amor ao trabalho e a ordem que na escola adquiriram.

Á vista dos bons resultados colhidos nesta escola o Governo tratou de crear outras congeneres em Mogy-Mirim, Sorocaba e Taubaté.

ESCOLA DA FORÇA PUBLICA.

O interesse pelo ensino não permittiu se deixasse no olvido a força publica, num Estado que offerece instrucção a todas as camadas populares. O Governo, então, instituiu para praças inferiores e officiaes cursos literarios e scientificos.

O aproveitamento nos cursos, assim como o bom cumprimento de deveres em geral, são seguro meio de conseguir promoção.

EDUCAÇÃO DA MULHER.

Para a educação e ensino do sexo feminino, ha no Estado, além dos cursos gymnasiaes e normaes, da Escola Profissional Feminina e do Seminario das Educandas, grande numero de bem montados collegios, tanto na Capital como no Interior, dirigidos por seculares ou por Congregações religiosas de varias denominações.

EL ESTADO Y LA MÚSICA EN LAS AMERICAS.

Por NARCISO GARAY,

Director del Conservatorio Nacional de Música y Declamación de la República de Panamá.

INTRODUCCIÓN.

En los Estados Unidos de América la música se considera generalmente como una facultad universitaria, en tanto que en Europa es un ramo técnico que se enseña en escuelas especiales comúnmente llamadas conservatorios.

En el Programa Preliminar del Segundo Congreso Científico Panamericano se hacen elogios de las escuelas de medicina de Centro y Sud América.

Su alto nivel científico parece atribuirse al hecho de que en esos países el Estado asume el dominio de la instrucción médica y confiere los títulos profesionales.

Este método no es de origen latinoamericano, sino importado de Francia.

Asimismo, los conservatorios de música de Centro y Sud América son de propiedad del Gobierno Nacional o del municipio y los diplomas profesionales son conferidos de conformidad con los principios franceses.

En la América del Norte la música ha sido principalmente considerada como un ramo de la instrucción universitaria, mientras que en Europa y en los países latinoamericanos en donde la influencia europea ha sido preponderante en asuntos de literatura y arte, la música, por regla general, es clasificada como instrucción especial o técnica. Naturalmente, ella presenta ambos caracteres, ni más ni menos que la medicina y el derecho, y, a la verdad, me sería muy difícil indicar el punto en donde cualquiera de estas materias abandona su aspecto universitario para asumir uno técnico, o viceversa.

Leyendo el programa preliminar de este congreso, que ha circulado profusamente en nuestros países, encontramos bajo el epígrafe "Instrucción Técnica," parágrafo (C), sección IV, página 23, un pasaje digno de especial consideración. Dice así:

Se reconoce generalmente el alto nivel de las escuelas de medicina de Centro y Sud América. Débese esto en gran parte al hecho de que en dichos países el Estado ha asumido la responsabilidad de la instrucción médica y en la práctica escolar, permitiendo así a las facultades de las escuelas médicas establecer una norma científica muy alta y poner en vigor muy severas disposiciones para el ejercicio de esa profesión. La facultad de medicina es no sólo un cuerpo administrativo, sino una agrupación docente. Prueba la capacidad adquisitiva de los estudiantes para determinar los progresos en sus asignaturas y verifica el examen que concede al estudiante el privilegio de practicar su profesión. Está también facultada por el Estado para dar disposiciones que rijan la práctica de la medicina en toda la nación. Así, hasta cierto punto, guía al médico profesional. Comparados con estos medios excelentes y efectivos que aseguran y mantienen los regímenes profesionales, los métodos de formar doctores y de autorizar el ejercicio de esa profesión en los Estados Unidos, parecen bastante imperfectos y mal organizados.

Nada mezquino es el elogio arriba tributado a las escuelas de medicina de Centro y Sud América por los promotores del Segundo Congreso Científico Panamericano, y, ciertamente, resultaría inmodesto de mi parte el tratar de captar ese mismo elogio en beneficio de nuestros conservatorios y escuelas de música; pero, en realidad, el mismo razonamiento que se aplica a la instrucción médica podría extenderse a la instrucción musical y artística en muchos de nuestros países.

Eliminando el punto de la instrucción de las bellas artes en general, que está, por decirlo así, fuera de mi jurisdicción, permítaseme concretarme únicamente a la enseñanza de la música, ramo que exclusivamente me concierne.

Nosotros, los latinoamericanos, no podemos, sin embargo, reivindicar la paternidad de estos métodos cuya eficacia reconocen categóricamente los promotores de este congreso. Debemos a nuestra conciencia y a los fueros de la verdad el declarar que en este dominio hemos aplicado sencillamente a nuestros países los principios preconizados en materia de instrucción profesional por una gran nación considerada por todos los latinoamericanos como nuestra segunda patria: Francia.

Los conservatorios de música en los países centro y suramericanos, al igual de las escuelas médicas, se han basado en ideas y modelos franceses. De consiguiente, es deber nuestro rendir homenaje al genio y altruismo de aquella nación querida, a la cual corresponde la gloria y el mérito de estos métodos cuya bondad comentan en tan altos términos los organizadores de este congreso.

Antes de que el Conservatorio Nacional de Música de la República de Panamá hubiese sido galantemente invitado por el Secretario de Estado del Gobierno de los Estados Unidos de Norte América para tomar parte en el Segundo Congreso Científico Panamericano, ya habían llamado mi atención los métodos que prevalecen en los

Estados de América para la enseñanza elemental de la música. En el Capítulo VI de este escrito aparecen algunas observaciones a este respecto, y yo habría tratado más a fondo esta materia si el punto más importante de la intervención gubernativa en la instrucción médica no hubiese sido mencionado en los términos arriba transcritos por los promotores de este congreso. Pero la estrecha analogía que existe entre los métodos adoptados en nuestros países para la instrucción médica y la instrucción musical me inducen a emprender la descripción analítica de la labor efectuada por el Conservatorio de Música en Panamá, sacando de allí deducciones de orden social, económico y artístico que honradamente estimo de vasto y práctico interés desde el punto de vista panamericano.

Si razones de salubridad pública pueden obligar a un Gobierno a inmiscuirse en la instrucción médica o en la práctica de la medicina, basándose en que los médicos tienen en sus manos las vidas de la comunidad; y si razones de utilidad pública pueden constreñir a un gobierno a intervenir en la enseñanza del derecho o en la práctica forense basándose en que los abogados y jueces manejan el derecho humano, es mi propósito demostrar que no menos poderosas razones justifican la acción oficial en la enseñanza de la música y en la reglamentación de la profesión musical, puesto que la música es "una materia práctica al propio tiempo que educativa," según la definió una vez el Hon. Dr. Ph. P. Claxton, presidente de esta sección del congreso, añadiendo, muy acertadamente, que "la música es tan necesaria como la lectura, la escritura y la aritmética." "En verdad," dijo "yo la clasificaría inmediatamente después de estas tres materias llamadas esenciales, como unas de las grandes necesidades de la vida humana."

Que el concepto de la educación musical en Centro y Sur América está inspirado en principios franceses, se puede demostrar nombrando algunas ciudades como México, Guatemala, San José de Costa Rica, Panamá, Bogotá, Quito y Santiago de Chile en las cuales existen conservatorios de música instituidos sobre la misma base de absoluta gratuidad que los establecidos por el Gobierno de Francia. Estos conservatorios son enteramente costeados por los gobiernos nacionales, federales o municipales. En ellos no se exige cuota alguna a los alumnos, ya sean estos nacionales o extranjeros, pues sus esfuerzos se encaminan al progreso de la educación nacional y de la habilidad técnica. De consiguiente, en esos establecimientos no se hacen concesiones a los alumnos ni al público, puesto que, hallándose desprovistos de toda tendencia mercantil, no tienen mayor interés en atraer clientes.

M. Albert Lavignac, profesor del Conservatorio de Paris y autor de "Educación Musical," considera este sistema de absoluta gratuidad como un gran elemento de superioridad en una institución musical y piensa que su carácter filantrópico, que excluye toda idea de explotación, permite a la institución seleccionar sus alumnos entre los mejores talentos. Observa, además, que las empresas privadas organizadas sobre bases remuneradas pueden constituir buenas escuelas para aficionados, pero nunca producirán verdaderos artistas.

Una vez establecido que no reivindicamos títulos de propiedad ni derechos de patente sobre los métodos franceses introducidos a nuestros países tanto en materia de instrucción médica como de enseñanza musical, expondré las razones por las cuales los mismos principios deberían regir no sólo en los países europeos o centro-americanos sino también en Norte América y en ciertas Repúblicas suramericanas que, como la Argentina, abandonan a la iniciativa privada la tarea de promover la cultura artística entre los ciudadanos.

INSTRUCCIÓN PÚBLICA.

La enseñanza musical y la enseñanza médica son públicas y gratuitas en Francia, como también lo son en la mayor parte de los países latino-americanos.

La enseñanza gratuita es una consecuencia natural del principio de la responsabilidad del Estado, tal como lo entienden las democracias francesa y latino-americanas. La democracia anglo-sajona sigue estrechamente el principio individualista británico

y deja el campo abierto a la iniciativa privada. Las ideas modernas han desarrollado en los Estados Unidos de América tendencias socialistas que pueden inducir al Estado a intervenir en la instrucción secundaria, superior y profesional.

Si se admite y justifica que un Gobierno erija sus propias escuelas en las cuales se forma el carácter nacional y se conserva la unidad moral del país, esto no implica que el asunto no haya sido objeto de violentas disputas años o siglos atrás, cuando los Gobiernos no podían invadir el campo de la educación sin tropezar con lo que hasta entonces se consideraba como privilegio de sociedades privadas o de congregaciones religiosas. Lo que hoy miramos como el ejercicio legítimo del derecho de pública potestad que reside en el Gobierno—derecho que reivindica celosamente toda nación civilizada—fué en un principio causa de honda alarma tachada de atentado al derecho privado.

Los Gobiernos latinos han organizado dondequiera la educación pública dividiéndola en tres diferentes grados que corresponden, más o menos, a las diferentes clases sociales: La instrucción primaria, destinada al pueblo en general; la instrucción secundaria, destinada a personas de mayores alcances deseosas de ocupar empleos administrativos y de oficina al servicio del gobierno o de compañías privadas; la instrucción universitaria o superior, para gentes de altas capacidades aptas para abrazar las profesiones científicas o liberales. Estos tres grados de instrucción son públicos y la enseñanza es impartida gratuitamente por nuestros gobiernos. Los americanos anglo-sajones no han ido tan lejos en materia de acción gubernativa en asuntos de interés público. Ellos han abierto a la iniciativa individual un campo mucho más vasto. Las universidades y los colegios se han sustraído, hasta cierto punto, a la acción y al dominio del gobierno y han logrado conservar su antiguo régimen y organización, lo mismo que en Inglaterra. Otro tanto podría decirse de su instrucción industrial y técnica. Por tanto, la enseñanza pública y gratuita de la música está implícitamente contenida en el principio que rige la instrucción pública en las democracias francesa y latino-americanas.

Pero ¿intenta el Gobierno de los Estados Unidos perseverar en su actitud actual o está dispuesto a dejarse influenciar por ideas más socialistas? En la Gran Bretaña se habla ya de servicio militar obligatorio, y, si no fuera por su "espléndido aislamiento," las líneas de ferrocarriles ingleses se hallarían ya en manos del Gobierno, como lo están las fábricas de municiones. Tras los medios materiales para la defensa nacional, los medios ideales seguirían y la nacionalización de todos los grados de la instrucción sería un hecho cumplido.

En los Estados Unidos la instrucción primaria es dada por el Gobierno de los Estados en las escuelas públicas. La instrucción secundaria también recibe del Estado el debido apoyo, pero las universidades y las escuelas técnicas continúan siendo, en grande escala, privilegio de corporaciones privadas, de sociedades o de particulares. Aunque la fundación de escuelas oficiales de instrucción superior y técnica parece ser el campo de futura actividad del Gobierno Americano, este paso no ha sido franqueado aún.

Quando el Gobierno intervenga en la instrucción universitaria, industrial y profesional, las diferencias sociales, tan antagónicas al espíritu de la verdadera democracia, se suavizarán, y entonces será posible prestar atención más esmerada a la vocación, que es uno de los elementos esenciales para el buen éxito de los individuos en la vida.

La acción oficial en materia de instrucción es obra de las ideas modernas; es un desarrollo natural de las tendencias generales de nuestra época que tienden a aumentar la intervención del mecanismo oficial en la distribución de la riqueza intelectual y moral. En otros términos, una conquista del socialismo de buena ley.

LA ACCIÓN OFICIAL EN LA MÚSICA.

El espíritu mercantil. La explotación de los alumnos y los artistas por los profesores y agentes. Utilidad de la cooperación. La acción del Gobierno evitará o disminuirá los efectos de la especulación. La competencia sin vigilancia oficial es contraria a la democracia y a los intereses nacionales. La enseñanza privada sólo aprovecha a los ricos; ella hace que el espíritu nacional ceda el campo al espíritu comercial.

Inglaterra es libre-cambista y Estados Unidos es proteccionista, pero ambos países son libre-cambistas en el terreno musical. La protección a la música ha sido considerada siempre como una obligación nacional por las democracias y monarquías europeas; al proceder de este modo, Francia, Italia, Alemania, Rusia, han superado a Inglaterra y a los Estados Unidos como potencias musicales haciendo imposible toda competencia entre ellos. La protección a la música es la única solución del problema.

La música y las bellas artes han sido muy descuidadas como ramos de instrucción pública en los países de raza anglo-sajona, Inglaterra y los Estados Unidos. Los gobiernos nunca han tratado de cooperar con la iniciativa individual en ese terreno, a excepción de las escuelas primarias americanas que han incluido la música en el pensum reglamentario.

La influencia del mercantilismo ha sido mayor en el campo artístico que en el campo científico. Los diplomas y grados desprovistos de reconocimiento oficial han sido fuente de censuras para algunas escuelas médicas, como puedo colegirse de la fraseología del Programa Preliminar arriba citado; pero igual observación cabe hacer, y en mayor escala, respecto de las instituciones musicales las cuales no amenazan directamente la vida ni la salud de la humanidad.

En el Conservatorio de Música de Panamá hemos recibido a varios americanos graduados que, después de haber gastado grandes sumas de dinero en educación musical, tuvieron que llegar a la triste conclusión de que se les había enseñado todo menos música.

Donde no existe la intervención o la supervigilancia del Estado, la codicia humana predomina y la cultura artística tiene que luchar indefinidamente con este enemigo. En tales condiciones, la creación de escuelas oficiales es una bendición para la comunidad, tanto desde el punto de vista artístico como desde el moral y económico.

Los intereses asociados de los profesores de música y de los agentes musicales pueden haber contribuído en América a mantener la opinión pública en un estado de absoluta indiferencia respecto de las ventajas de la acción gubernativa en punto de educación musical.

La explotación de los artistas líricos por los agentes o intermediarios cuya intervención no puede menos que perjudicar a los artistas y al público—productores y consumidores—es un hecho bien conocido. Alzando artificialmente los honorarios de los artistas, en otros términos: especulando, los agentes trabajan para sí mismos, como que gran parte de esos honorarios queda en su poder y el consumidor, el público es la única víctima.

Recuerdo como se explotaba en Francia a los pobres artistas líricos por parte de los agentes y profesores coaligados para tal fin. Muchas de esas alianzas se hacían pagar un tanto por ciento vitalicio sobre el salario de los artistas. Si semejante orden de cosas existía en Francia, en donde la educación musical es pública y gratuita, ya podemos figurarnos qué no acontecerá en países donde el mercantilismo ha alcanzado un desarrollo superior.

Duro se hace creer que los artistas no hayan tomado providencia alguna para eludir los fuertes gravámenes que sobre ellos hacen pesar los improductivos. En este sentido no ha habido esfuerzo cooperativo propiamente dicho, por más que éste hubiera sido igualmente beneficioso para los artistas y para el público.

Leyendo las publicaciones musicales americanas no es posible dejar de observar el silencio que guardan respecto de la acción oficial en el campo de la música. Allí se discute sobre dos sistemas de enseñanza musical: privada y conservatorial; es decir,

individual y colectiva, pero no parece sospecharse siquiera que el denominado sistema conservatorio pueda ser de dos maneras: (a) en provecho de los profesores principalmente, y entonces los alumnos pagan a aquellos, o (b) en beneficio de los alumnos principalmente, y entonces el gobierno remunera a los profesores, como en otros ramos de la instrucción pública.

Se ha dicho que no hay probabilidad de obtener auxilio del Estado o de la Federación para la educación musical en los Estados Unidos, bien que para ello no se ha dado razón plausible. En efecto, no considero razonable el decir que los americanos son de por sí suficientemente ricos para poderse dispensar de la ayuda oficial en la instrucción musical. La cuestión, a mi juicio, no es de riqueza o de pobreza sino de doctrina, y no debería plantearse en otra forma.

Los franceses, los belgas, los italianos, los españoles, los alemanes, los austriacos y los rusos protegen todos su música y su técnica, del mismo modo que protegen sus tesoros de arte, su idioma, sus creencias nacionales, sus industrias y su comercio. Es un deber de la raza que nada tiene de común con la miseria o la opulencia. Ellos se sienten orgullosos de esa actividad estética que consideran como una porción del patrimonio nacional y que les ayuda a conservar la unidad moral del país.

Echar sobre los hombros del gobierno la carga y el cuidado de guiar y supervigilar la educación artística es tarea más conforme con la democracia y la protección (dos principios gratos a Norte América) que el presente abstencionismo.

Como ya dije, las tendencias modernas favorecen el procedimiento de colocar la instrucción profesional y técnica en manos del Estado, y lo que hoy parece peligrosa aventura será en lo futuro una práctica conservadora. Contemplo en el futuro el día en que cualquier intento para sustraer la instrucción profesional superior de las manos del Estado será considerado tan ridículo como aparecería hoy el quitar al gobierno el privilegio de acuñar la moneda. El abuso de la especulación que obligó al Estado a monopolizar la fabricación de moneda, lo obligará a intervenir en el campo de la instrucción técnica a título de fuerza reguladora.

El libre cambio en arte es contrario a los intereses de la música nacional y la falta de acción oficial resulta en detrimento de la democracia porque perjudica los intereses del pobre. En los países en donde la enseñanza privada reina sin rival, la música es el privilegio de las clases opulentas, únicas capaces de pagar crecidos honorarios a los buenos profesores y de viajar por el extranjero.

Yo me pregunto porqué un país como Estados Unidos, tan diferente de Inglaterra en su estructura política y económica, ha adoptado, sin embargo, las teorías inglesas en materia de arte. Los conservatorios de música americanos, al igual de los conservatorios ingleses, tienen algo así como la apariencia de casas de negocio y su entrada está prácticamente prohibida a los pobres. Los grandes teatros en Norte América, como los de Inglaterra, pertenecen a sociedades privadas y llegan a convertirse en centros de especulación y de negocios con perjuicio de las personas pobres, incapacitadas para entrar a ellos. En presencia de estas desfavorables condiciones, ¿no es acaso un deber para un gobierno democrático el dar un paso decisivo en el sentido de colocar la música al alcance de todos aquellos, pobres o ricos, que posean verdadera vocación?

La acción oficial es, a mi entender, un equivalente de la protección nacional, puesto que la primera no se propone otro objeto que fomentar la cultura nacional y mejorar los métodos para hacerla efectiva.

Puédese dudar aun respecto de la utilidad de la intervención oficial en cuestiones musicales, así como en otros asuntos relativos a la educación, porque todos sentimos, más o menos, la influencia de las denominadas teorías liberales de los economistas ingleses. Hace un siglo que estos enérgicos defensores de la acción individual objetaban la acción del Gobierno en el campo del comercio, la industria y hasta de la educación, y procedían de esta suerte en el nombre y por la salud de la libertad.

Pero los Estados modernos no han caminado, por lo general, tras las huellas de Inglaterra. Han comprendido que tales teorías sólo resultan buenas para los británicos por causa de su peculiar posición geográfica y de su inmenso imperio colonial. Los Estados Unidos, por ejemplo, se han cuidado bien de invocar el libre cambio y, respecto al principio de la intervención oficial, el moderno punto de vista americano se refleja de modo inequívoco en el sistema adoptado por el Mayor General George W. Goethals, gobernador del Canal de Panamá, tal como él mismo lo describe en la revista de Scribner.

La construcción del Canal de Panamá, en el cual una empresa privada fracasó dos veces, no por razón de incompetencia técnica ni por falta de capital, sino debido a la mala administración, el soborno y la corrupción, ha sido una brillante victoria para el Gobierno Americano y para la teoría de la iniciativa oficial en grandes empresas de ingeniería.

Naturalmente, es necesario que prevalezcan los grandes ideales del bien público, desinterés y patriotismo puro antes de encomendar a la iniciativa oficial la tarea poderosa de enseñar un ramo de la educación profesional, o de supervigilar el campo de la enseñanza privada; pero tan necesario elemento moral no escasea en un país en donde grandes adelantos se han efectuado en materia de socialismo de estado, a juzgar por los experimentos de las autoridades americanas en la Zona del Canal.

El grande arte, como la gran ciencia, ha menester el auxilio oficial para vivir y desarrollarse. Los grandes hombres de ciencia, los sabios, los descubridores de las leyes que rigen el movimiento de las fuerzas naturales, deberían ser atendidos por la nación en la cual viven y a la cual honran. De otro modo, podrían desviarse del camino de la investigación paciente para entregarse a tareas industriales y quedar bajo la dependencia de la protección privada, siempre humillante.

La alta cultura musical en las monarquías europeas, tales como Alemania y Austria, reclamaba la protección de los reyes, príncipes y otros miembros de la realeza. Los compositores y los directores de sus *capillas* eran Haydn, Mozart, Beethoven. Los nombres de Esterhazy, Lichnowsky, el Archiduque Rodolfo y otros reales benefactores, son familiares a cuantos conocen la historia de la música. El mismo Wagner habría permanecido casi ignorado del mundo sin el espléndido gesto de Luis de Baviera.

Que Inglaterra no es una nación musical de primera categoría, capaz de cotizarse a la par con los grandes mercados musicales del continente europeo, lo demuestra anualmente la temporada de ópera del teatro de Covent Garden, en Londres, y el personal que compone las orquestas sinfónicas del Reino.

Tres compañías extranjeras: una italiana, una francesa y una alemana, aparecen cada año en Covent Garden por una corta temporada, al lado de una pobre exhibición local, pobre no sólo en cuanto a la producción musical, sino también en cuanto a interpretación. Algo semejante acontece en el Metropolitan o el Manhattan Opera House de Nueva York.

Las grandes orquestas sinfónicas de las principales ciudades inglesas, inclusive Londres, contienen tal mayoría de elementos extranjeros que hacen insignificante la cooperación nacional. Igual observación cabe hacer respecto de las orquestas sinfónicas de Boston o de Nueva York.

Puesto que estos elementos foráneos recibieron en sus respectivos países el beneficio de una instrucción musical superior y gratuita, beneficio que rehúsa a los americanos su propio Gobierno, toda competencia equitativa es desde luego imposible.

El adelanto musical ha sido posible en Panamá porque el Gobierno Nacional lo fomentó directamente. Muchas otras cosas de utilidad pública no han sido intentadas en nuestro país porque, por regla general, la iniciativa privada es sorda a todo llamamiento que no implique una ganancia material.

Varios particulares han hecho recomendables esfuerzos en los Estados Unidos para establecer óperas y orquestas de carácter elevado, pero todos han fracasado en poblaciones menores de 100,000 habitantes, por falta de protección oficial. A propósito de

esto, convendría recordar que muchas ciudades europeas, mucho menores aun, se ufanan de un conservatorio oficial, de un teatro de ópera y de conciertos sinfónicos semanales, todo lo cual es consecuencia natural del favor gubernativo.

Ningún grande artista americano—verdaderamente americano y verdaderamente artista—recusaría su concurso si se intentara un común esfuerzo para levantar el nivel de la música en su país. Antes bien, todos se sentirían orgullosos de ser profesores en una institución oficial del tipo del conservatorio donde se preparase el porvenir musical; y lo harían más por amor a su país que por consideraciones de orden monetario.

Es sabido que el Gobierno francés solo paga honorarios nominales al cuerpo docente de los conservatorios nacionales de música, pero el honor de profesar en ellos es tan codiciado que los artistas franceses descuidan su interés pecuniario para contribuir a la gloria del arte nacional.

No sería sorprendente que se invocase una vez más la doctrina de la libertad en el arte contra el principio de la acción oficial en achaques de música. Esa vieja doctrina revive *ab eterno* contra el principio del arte oficial, de las academias y conservatorios, gracias a cierto elemento que parece considerar el genio como la mejor prueba de la generación espontánea.

La libertad en el arte, como la libertad en el comercio, conviene a los extranjeros y a algunos profesionales hijos del país que nada temen de la competencia extranjera. Empero, para los nacionales, el fomento oficial de la cultura musical es por todos conceptos preferible.

DIPLOMAS OFICIALES.

La cuestión musical en los Estados Unidos proviene de la falta de acción oficial.

La campaña para establecer el examen obligatorio de los músicos, iniciada en los Estados Unidos por los músicos profesionales, fracasó debido a su aspecto egoísta, pero la colación de diplomas por el Gobierno sería el mejor remedio para la situación actual.

Los derechos individuales deben ser respetados. Las relaciones entre la enseñanza pública y la privada, lejos de ser antagónicas, deberían ser de carácter amistoso y sus respectivas actividades convenientemente definidas.

Experimentos prácticos hechos en Panamá.

Si el problema artístico hubiese preocupado a los organizadores del Segundo Congreso Científico Panamericano, ellos habrían ensanchado el alcance de su interrogación al preguntar en el Programa Preliminar si es conveniente dar al Estado una participación más activa en la colación de los diplomas médicos.

El movimiento emprendido en muchas de las grandes ciudades americanas para unificar el ejercicio de la profesión musical y establecer exámenes obligatorios presididos por jurados especiales, demuestra que algo irregular existe también en el mundo musical. Desgraciadamente, no se ha indicado el verdadero remedio, y yo creo que no se podría adoptar mejor correctivo que el de la ingerencia oficial.

Cuando el Gobierno Nacional, Federal o municipal, intervenga en la distribución de diplomas o certificados musicales, la desazón que hoy se evidencia en todo el país desaparecerá considerablemente.

En cuanto a la campaña de unificar o normalizar la enseñanza musical, soy de opinión que el remedio sugerido no era apropiado a la enfermedad. Las sociedades musicales pretendían que el Gobierno viniera en su ayuda para obligar a los maestros de música a presentar examen y privarles del derecho de enseñar si el examen no hubiere resultado satisfactorio. Proceder así habría sido desatender los derechos individuales y tratar de establecer una especie de monopolio que le enajenaba a la causa la simpatía universal. Doy por sentado que ningún gobierno en el mundo, ni siquiera el de Turquía o Rusia, consentiría en hacerse responsable de tan rigurosa acción, y la solicitud, como era de esperarse, fué cortesmente negada. Pero si en vez de paso tan radical se hubiera pedido al gobierno que ejerciera su derecho de fiscalización en el terreno de la enseñanza musical con la mira de favorecer los intereses de los

ciudadanos por medio del adelanto de la educación musical y sin menoscabo de la libertad de enseñar, estoy cierto de que no se habría rechazado de plano tan razonable petición.

Naturalmente, esa ingerencia no debería acarrear perjuicios a la enseñanza privada, como no los acarrea a las escuelas primarias, porque la intervención oficial en este sentido significa regularización y no monopolio. La acción oficial, en efecto, no ha eliminado en ningún país la enseñanza privada; por el contrario, la ha respetado y estimulado. Pero ningún gobierno debería abdicar sus derechos de dirección suprema y supervigilancia, inherente a su condición de poder público, en este importante asunto de la enseñanza privada que afecta el porvenir de millones de ciudadanos.

El proteccionismo, entendido en el sentido de la unificación de la enseñanza, deja el problema pendiente, pero si se le interpreta en el sentido de la cooperación oficial, de la instrucción gratuita, de la cultura artística en general, del desinterés y del altruismo, permitirá a los americanos, en los años venideros, ocupar los puestos reservados ahora a los extranjeros.

La clase de protección a que aludo en estas páginas no requiere la imposición de gravámenes sobre la música ni sobre los músicos extranjeros, como se hace con los productos y las mercancías extranjeros. Tal sistema, aplicado a la música, no daría otro resultado que el de elevar el costo de la música para el ciudadano y constituir una especie de privilegio favorable a los músicos, y perjudicial a los que no lo son. Los mismos músicos saben muy bien administrarse esta última clase de proteccionismo por obra de sus sindicatos o asociaciones sin que el gobierno intervenga para nada en ello. El proteccionismo que preconizo es mucho más amplio, se propone la cultura general y se extiende a los profesionales y a los no profesionales.

Acaso sea incorrecto hablar de proteccionismo, palabra que tiene un sentido técnico en economía política, al referirme a este sistema de auxilio oficial que tan encarecidamente recomiendo y que ha sido probado con éxito feliz en un país tan joven como la República de Panamá. Pero el error, si alguno ha habido, es de naturaleza puramente jurídica y a un músico puede serle fácilmente perdonado.

Algo digno de mencionarse ocurrió en la ciudad de Panamá once años ha, cuando se estableció el Conservatorio de Música. Los profesores de la localidad no acostumbraban enseñar solfeo. Por el contrario, tenían a sus alumnos en tal ignorancia en cuanto a lectura musical que parecía como si abrigasen secretos, temores, por el progreso de sus alumnos. Acaso pensaban que tan pronto como los alumnos hubiesen alcanzado una clara comprensión de los signos de la notación y de los principios elementales de la música, los servicios de los maestros habrían de resultar innecesarios, y todo su empeño parecía cifrarse en mantener a los alumnos en estado de dependencia, forma de tiranía muy propia de la humana naturaleza.

Tan pronto como el conservatorio comenzó a enseñar solfeo y la gente empezó a darse cuenta de que cualquiera podía leer a primera vista un trozo de música tan bien como se lee un periódico, ciertos maestros de música dieron por sentado que se les había descargado un golpe de muerte, y en seguida comenzó una campaña de sordas intrigas y de críticas contra la nueva institución.

No tardaron ellos mucho, sin embargo, en descubrir que nada había sido tan infundado como su grande alarma. Por supuesto, que tuvieron que cambiar de métodos de enseñanza, pero el número de sus alumnos no disminuyó y les sorprendió extraordinariamente ver que las cosas no tomaban el giro pesimista que ellos habían previsto. He aquí un ejemplo de una nueva conquista de la libertad y de la civilización, nada sangriento ni ruidoso, pero no por eso menos meritorio y consolador, como que prueba cuán infundados son los temores de quienes se sienten obligados a invocar la ignorancia o la tiranía en defensa propia.

La protección oficial en favor del desarrollo de la educación musical, no hará daño alguno a los profesores particulares ni comprometerá los buenos resultados de la competencia. Al contrario, creo que el resultado final de semejante empresa será

provechoso a los maestros particulares y a la comunidad en general. En Europa, los conservatorios oficiales de música sólo reciben talentos de primera clase, en tanto que los talentos comunes tienen que acudir a la enseñanza privada. El primer medio, eleva el nivel profesional; el segundo, propaga el amor a la música en general.

Lejos de causar perjuicio a la enseñanza privada de cualquier clase, el deber del Gobierno consiste en tratarla como amigo o asociado secundando sus esfuerzos en el sentido de mejorar sus métodos y su eficacia en pro del bien general.

PROTECCIÓN OFICIAL A MEDIAS.

La protección oficial a la música nacional se extiende más allá de la instrucción profesional que se da a los alumnos y guía a los artistas novicios en la vida.

Además de los conservatorios de música y declamación, Francia posee los grandes teatros donde los laureados de los conservatorios son contratados por años.

Bien que poseyendo también teatros nacionales, los gobiernos latino-americanos han descuidado crear los vínculos necesarios entre esos teatros y los conservatorios, efectuando así sólo media labor proteccionista y copiando a medias los modelos franceses.

La protección teatral secundada por el Hon. Dr. P. P. Claxton.

Una vez facilitada la adopción de la carrera musical a las personas de toda condición social por medio de la creación de escuelas especiales o conservatorios de música costeados por el Gobierno y gratuitos para los alumnos, no hay que pensar que las autoridades han cumplido ya con todas sus obligaciones para con sus conciudadanos. Dando por sentado que los músicos profesionales han sido ya adiestrados en los conservatorios públicos, el Estado no puede descuidar su suerte ulterior y arrojarlos sin defensa en brazos de ambiciosos empresarios, agentes de conciertos y otros parásitos del mundo musical. Esta práctica sería tan poco lógica como la de fomentar un intenso desarrollo industrial para luego denegar a los ciudadanos los medios de exportar el *surplus* de sus manufacturas. En ese caso el exceso de producción, en vez de favorecer los intereses nacionales, obraría en contra de éstos empobreciendo la industria, abaratando la obra de mano y provocando crisis domésticas.

He aquí porqué considero que los gobiernos que profesan la doctrina de la intervención oficial en materia de instrucción artística y que desean poner los medios para hacer efectiva tal intervención, fracasan en su empeño cuando vacilan o retroceden ante la consecuencia lógica de aquella doctrina, es decir, la acción oficial en materia de actividad teatral, la cual debe manifestarse poseyendo el Estado los teatros nacionales o subvencionándolos para que cooperen a los fines de la cultura artística nacional. El gobierno francés, por ejemplo, no sólo posee los conservatorios de música y declamación sino también los teatros nacionales donde se representa la ópera, la ópera cómica, la tragedia, la comedia y el drama. Los alumnos de los conservatorios, al ingresar a estas instituciones, contraen el compromiso de representar, por cierto número de años, al finalizar sus estudios y de esa manera el Gobierno guía a sus propios artistas a través de la vida hasta mucho después de la terminación de sus estudios técnicos. Extiende su protección a los teatros nacionales donde se contratan los mejores talentos hasta que reciban su consagración definitiva, pues de otro modo los esfuerzos del Estado en favor de la cultura musical podrían resultar ilusorios.

En nuestro hemisferio occidental las cosas pasan de muy diferente manera. Estados Unidos, por ejemplo, no comparte la teoría de la intervención del gobierno en asuntos de música y, por consiguiente, no posee conservatorios ni teatros del Estado. En algunas de nuestras Repúblicas sur-americanas, la teoría de la intervención oficial ha sido generalmente adoptada en lo concerniente a los conservatorios y escuelas, pero en lo tocante a teatros, dicha teoría se limita, por lo general, a la posesión, por parte del Estado, de los edificios, sin intervención alguna con la verdadera actividad teatral. En otros casos—y estos son los peores—el Estado posee un teatro nacional y carece de escuelas de música.

Santiago, la capital de la República de Chile, posee un conservatorio oficial de música y declamación en el cual se da gratuitamente a los alumnos una educación

musical completa, pero el mismo gobierno que así interviene en favor de la cultura nacional, abandona el campo teatral a la codicia de los empresarios, quienes, llamados a escoger entre el arte y el negocio, dan sin vacilar la preferencia al segundo y perjudican seriamente la buena obra realizada por el Gobierno en el conservatorio.

En Argentina creo que no existen conservatorios ni teatros de propiedad del gobierno, lo mismo que en Estados Unidos; pero en la mayor parte de los países latinoamericanos se repite el caso de Santiago de Chile. La ingerencia del Estado se reduce a la instrucción técnica, sin tener en cuenta para nada la suerte ulterior de los músicos ya formados por el conservatorio. La principal diferencia digna de indicarse es ésta: algunos de esos países tienen teatros de propiedad nacional o municipal, como Guatemala, Costa Rica, Colombia y Ecuador, pero esta circunstancia, por sorprendente que ello resulte, no ha ejercido influencia sensible en el desarrollo del arte nacional y los hermosos edificios parecen iglesias desprovistas de sacerdotes.

La construcción de hermosos y costosos teatros por los Gobiernos de Centro y Sud América ha inculcado a muchos la creencia de que en esos países existe una alta cultura musical, deducción que no es rigurosamente exacta. Bien que la cultura musical es innegable, los edificios en cuestión no tienen relación esencial con ella. Esos dispendiosos monumentos fueron erigidos en varios casos, para provecho de los contratistas, pero, en lo general, por irrazonada imitación del ejemplo europeo.

Efectivamente, en la América Latina hemos logrado imitar lo europeo, aunque sólo a medias. No hemos copiado el mecanismo interno de los teatros oficiales de Francia y nos hemos mostrado así incapaces de descubrir los vínculos íntimos que existen entre los diferentes órganos de la vida artística en Europa.

En Panamá, mi propio país, la tendencia a plagiar lo francés se manifestó desde los albores de nuestra nacionalidad. Antes de 1903 no existía en el país cultura musical, dramática ni literaria suficiente para justificar el gasto que requería la construcción de un Teatro Nacional, pero el Gobierno emprendió la obra, sin embargo, porque se consideró obligado a incurrir en esa misma imitación incompleta e irrazonada de lo francés, de que nos habían dado ejemplo nuestros vecinos los costarricenses y los colombianos. Este género peculiar de protección oficial en favor de la sedicente causa del Arte encuentra con facilidad simpatías y ayuda en la opinión pública porque implica diversiones para el pueblo y ganancias para los contratistas. Así sucedió que por muchos años nuestro Teatro Nacional sólo aprovechó a las compañías extranjeras de tránsito en el Istmo, las cuales obtenían del Gobierno el uso del edificio libre de gastos, incluyendo luz y tramoya; infeliz circunstancia que me indujo a imaginar un proyecto práctico en virtud del cual el dinero invertido en la construcción del edificio y en el mantenimiento de la planta, pudiera utilizarse finalmente en pro de la causa del arte, según se demuestra en el Capítulo VIII, parágrafo A, página 41 de este escrito.

He leído que el Honorable Dr. Philander P. Claxton, Comisario de Instrucción de los Estados Unidos y uno de los Directores del Segundo Congreso Científico Pan-Americano, decía, no hace mucho, que si él fuera millonario algún día, establecería en todo el país teatros municipales de ópera en donde el pueblo común y todos los que trabajan, pobres o ricos, pudieran escuchar cosas que enseñan elevación y belleza. Y es consolador saber que el proyecto de difundir la cultura musical por medio de la actividad teatral recibe tan magnífica adhesión y en tan escogidos términos como los arriba citados del Honorable Dr. Claxton. Pero ¿es realmente necesario ser millonario para ello? No tiene acaso el Comisario de Instrucción de los Estados Unidos mayor poder y autoridad para convertir esos sueños en realidad que cualquier millonario de hecho o en potencia?

CAUSAS POSIBLES DE ATRASO EN EL DESARROLLO MUSICAL.

El sistema del "do-desplazable," adoptado en los Estados Unidos para la enseñanza fundamental de la música, considerado desde el punto de vista de la teoría y la práctica musical.

Superioridad del solfeo puro sobre el sistema del do-desplazable, el "galinismo," el "tonic-solfa" y aun sobre el alfabeto musical alemán.

Los alemanes necesitados de canto, según Ricardo Wagner.

Interesantes experimentos hechos en el Conservatorio de Panamá.

El hecho de que unos doscientos alumnos americanos se han matriculado en el Conservatorio Nacional de Música de Panamá, sobre un total de mil cien alumnos, me ha dado la oportunidad de observar en un sentido general las características de la enseñanza musical en América. Aquellos discípulos americanos pertenecían a tan diversas categorías sociales, provenían de lugares tan distintos y habían recibido los primeros rudimentos musicales de fuentes tan diferentes, que cualquier rasgo común a todos ellos tenía necesariamente que considerarse como exponente del sistema nacional.

A decir verdad, ninguno de esos doscientos alumnos sabía leer música en el sentido completo de la palabra. Todos ignoraban el solfeo. Aunque unos eran buenos instrumentistas y otros buenos cantores, ninguno era buen "músico" en la acepción técnica del vocablo. Sus principios eran defectuosos en el sentido de que ninguno de ellos, puesto al frente de una página de música, podía escucharle mentalmente ni comprender instantáneamente su significado musical.

Investigando las causas de tal estado de cosas, he llegado a atribuirlo en parte al "do-desplazable." Este es el sistema de enseñar música en los Estados Unidos, como lo atestiguan nuestros doscientos discípulos. Participa del sistema de la notación moderna, del "tonic-solfa," de la solmización medioeval y del solfeo que se usa en los países latinos; pero en relación con la música misma, ocupa la posición de un sistema auxiliar, al igual que el "galinismo," el "tonic-solfa," el método de Dessier y otras combinaciones inventadas para simplificar el aprendizaje de la música. La utilidad de estos métodos simplificativos, empero, es altamente discutible cuando en lugar de mantenerse en su condición de sistema auxiliar, tratan de suplantarlo el sistema usual y la teoría universal de la música.

La práctica del solfeo nos enseña que "do" es cierta nota colocada en cierta línea o espacio del pentagrama, de acuerdo con cierta clave. Una vez determinada por la clave la posición de "do" en el pentagrama, las notas que le siguen en la escala mayor ascendente se denominan sucesivamente "re," "mi," "fa," "sol," "la," "si," y mientras esa clave prevalece dichas notas no pueden cambiar de nombre. Pero viene el sistema del do-desplazable y nos enseña que, sin que ningún cambio de clave intervenga, "mi" se convierte en "do" cuando el tono se arma con cuatro sostenidos; "re" se convierte en "do" cuando el tono se arma con dos sostenidos; "fa" se convierte en "do" cuando el tono se arma con un bemol, y así sucesivamente. Preguntad ahora a un pianista si en el teclado "mi" se convierte en "do" cuando el tono exige cuatro sostenidos, o "fa" se convierte en "do" cuando el tono exige un bemol; su respuesta será negativa: aquellas notas no cambian en el teclado cualquiera que sea el número de sostenidos o bemoles de la armadura. Por consiguiente, el sistema del do-movible es falso: rompe la unidad necesaria entre la práctica musical y la teoría, e introduce complicación donde sólo se buscaba simplificación.

El sistema del do-movible obliga al alumno a "transportar" constantemente desde el principio de los estudios, como también lo hace el "galinismo" por medio de sus cifras. Y si consideramos que el transporte es una de las mayores dificultades de la lectura musical, pues requiere el conocimiento previo y completo de las siete claves, habrá que convenir en que los sedicentes sistemas simplificadores invierten el orden natural de las cosas iniciando al alumno, desde el principio de los estudios, a las más trascendentes dificultades de la lectura.

Nuestra moderna teoría musical divide la octava en doce semitonos iguales, cada uno de los cuales es la base de todo un sistema tonal. Este problema fué resuelto en la época moderna por Juan Sebastián Bach, quien demostró la practicabilidad de este principio componiendo sus 24 preludios y fugas (12 mayores y 12 menores) denomi-

nados "El Clavicordio bien atemperado." En los viejos tiempos griegos Aristógenes de Tarento sostuvo la misma teoría contra la escuela de Pitágoras. La riqueza de colorido y de expresión que esta diversidad tonal ha impartido a la música, no requiere demostración. Las relaciones tonales son las leyes arquitectónicas de la composición musical. Pero viene el "do-movible" y, haciendo tabla rasa de nuestro concepto tonal, sólo reconoce un factor tonal: "do." Aquí también aparece el sistema en pugna con la práctica y la teoría musical y, por consiguiente, resulta falso. Además, es contrario a las tendencias de la música moderna, desde luego que la vaguedad de la arquitectura tonal parece ser la característica de los compositores futuristas. Recuerdo que en 1900, cuando yo estudiaba composición musical en la "Schola Cantorum" de París, Mr. Vincent d'Indy, mi maestro, me dijo que cuando él visitó por vez primera al gran Liszt en Weimar, este último compositor le habló de la inutilidad de los tonos en música. ¿Cómo procederá, pues, el estudiante de música, por el sistema del "do-movible," para localizar su "do" cuando el tono no está indicado en la armadura, como ocurre en muchas obras modernas?

Mi propia experiencia me enseña que los alumnos que han aprendido el sistema del "do-movible" tienen mayor dificultad para entender y leer los diferentes tonos con sostenidos y bemoles que los alumnos desprovistos de toda preparación musical. Su mente está acostumbrada al "transporte," del cual no puede desembarazarse fácilmente.

La educación primaria se propone dar a los niños un resumen general de los conocimientos humanos y prepararlos para un desarrollo superior. Mas cuando un sistema de enseñanza constituye un estorbo para los jóvenes deseosos de ser más tarde músicos profesionales, su utilidad queda seriamente comprometida. Honradamente creo que una preparación musical que coloca obstáculos para el ulterior desarrollo de la comprensión musical, debería eliminarse cuanto antes del plan de estudios.

La razón que se aduce contra la notación musical moderna es su pretendida complicación. El "do-movible," como todos los sistemas auxiliares, está llamado a facilitar o simplificar su lectura. Pero mi propia experiencia en el Conservatorio de Panamá, donde existe una sección preparatoria, es que los niños de diez y once años son capaces de leer a primera vista y de cantar cualquier clase de música en cualquier tono. Estos niños no se dedican exclusivamente al estudio de la música, pues concurren a las clases de solfeo dos veces por semana, precisamente al salir de la escuela primaria. Debo agregar, en honor de la verdad, que rara vez preparan su lección a domicilio y que su habilidad en la lectura a primera vista es obra exclusiva de las lecciones de media hora que reciben dos veces en la semana.

Los niños americanos que comienzan sus estudios en nuestro Conservatorio y que se hallan libres de la influencia del "do movible," muestran tanta facilidad y rapidez como los niños panameños para aprender a leer y cantar la música a primera vista.

América no ha imitado la pedagogía musical alemana. En efecto, los alemanes no emplean el "solfeo" ni el "do-movible"—el cual es un solfeo de segunda mano vaciado en el molde del "tonic-solfa" de los ingleses—ellos emplean el sistema alfabético y esto se explica en gran parte por el carácter poco musical de la lengua alemana, su falta de vocalidad y su aspereza. No hay duda que el "solfeo," que es el mismo canto, impartiría a los músicos alemanes aquella vocalidad y sentido melódico de que tan necesitados están, si hemos de dar crédito al testimonio de Ricardo Wagner. Dice él a este respecto:

El canto es especialmente difícil para nosotros los alemanes, infinitamente más difícil que para los italianos, y aun más que para los franceses. La razón estriba no solamente en la influencia que el clima ejerce sobre los órganos de la voz, sino principalmente—y esto es fácil de comprobar—en las cualidades de la lengua.

La naturaleza, que lo ha hecho todo fácil para los italianos (quienes, por esta razón, se glorían de sí mismos), ha hecho difícil para los alemanes el uso de sus órganos vocales.

La enseñanza vocal recibida en los comienzos de la educación tiene que ser provechosa a todo músico, cualquiera que sea su especialidad en el arte. El canto, tan descuidado en Alemania, se venga no solamente en los cantores sino también en los instrumentistas y, sobre todo, en los compositores.

La voz humana es la base práctica de toda música, La más osada combinación del compositor, la mas audaz ejecución del "virtuoso," encuentra finalmente la ley de sus manifestaciones en el canto puro. Creo, por consiguiente, en la enseñanza obligatoria del canto para todos los músicos.

Debemos ocuparnos, en primer lugar, del "canto," porque su desarrollo—base de toda cultura musical—ofrece grandes dificultades y está muy descuidado en Alemania. (Del Informe al Rey Luis de Baviera sobre una escuela alemana de música en Munich.)

Más tarde Wagner insistió en la misma teoría en su estudio "Sobre el Arte de Dirigir la Orquesta:"

La lección mas elocuente me fué dada en 1839, cuando oí tocar por la orquesta del Conservatorio de París aquella Novena Sinfonía que ya comenzaba a serme sospechosa. Entonces las sombras cayeron de mis ojos, ví claramente en qué consistía la interpretación y desde ese momento descubrí el secreto que debía darme la solución del problema. La orquesta había aprendido a reconocer en cada compás el "melos" de Beethoven, que había escapado a nuestros valientes músicos de Leipzig, y ese "melos" lo "cantaba" la orquesta!

El músico francés está tan felizmente influenciado por la escuela italiana, a la cual pertenece en realidad, que para él la música no puede ser comprendida sino por el "canto." Tocar bien un instrumento significa, para él, "cantar" en este instrumento. Como acabo de decirlo, esta soberbia orquesta "cantaba" la sinfonía. Pero para cantarla bien, había que encontrar el movimiento exacto y este fué el segundo punto que llamó mi atención en esa ocasión.

Sin duda Habeneck no poseía a este respecto ninguna inspiración estética, en la acepción abstracta de la palabra; no tenía "genio," pero encontró el verdadero movimiento induciendo a su orquesta, por medio de la perseverancia, a descubrir el "melos" de la sinfonía.

No tomo añadir que nuestros directores de orquesta no entienden una palabra del verdadero movimiento de las obras porque no entienden una palabra de "canto." Nunca he visto un "Kapel Meister" alemán u otro director musical capaz de "cantar" una melodía con buena o mala voz.

Wagner, como se ve, preconiza el canto para el desarrollo del sentido melódico y del sentido rítmico. Dejó el camino libre para recomendarlo también en el desarrollo del sentido del tercer elemento musical: la armonía, como lo hizo él con los dos primeros elementos: ritmo y melodía.

A este respecto, voy a referir un incidente personal. En los días de la construcción del Canal de Panamá, había en la Zona del Canal una banda de música llamada "Banda de la Comisión del Canal Istmico" porque estaba formada por empleados civiles del Canal. El Director vino un día a Panamá y se inscribió en el Conservatorio como alumno de la clase de armonía. Además de dirigir la Banda de la Comisión del Canal, él tenía a su cargo las clases de música en las escuelas primarias de la Zona del Canal, en las cuales enseñaba la música de acuerdo con el sistema del "do-movible." Él me pedía claros principios y leyes sólidas en materia de armonía y pareció sorprendido al oírme decir que las leyes armónicas, si acaso existían podían caber en una hoja de papel, pero que la práctica de la armonía, es decir la comprensión de las relaciones tonales, el manejo hábil de los acordes y las tonalidades, era más un arte que una ciencia y requería años enteros de diario trabajar. El asombro del Director llegó al colmo cuando le dije que nada absoluto podía preescribirse en armonía, pues no había teoría ni regla que no hubiese sido conculcada y burlada por los grandes compositores. Su solicitud de fórmulas específicas no fué reiterada.

A decir verdad, el director carecía de la preparación necesaria para entrar en una clase de armonía, aun cuando poseía un diploma para enseñar música. No comprendía las relaciones tonales de la música y carecía de aquel sentido de la armonía que el mismo solfeo es capaz de desarrollar cuando se estudia con maestros competentes. En efecto, la educación armónica del oído es posible por medio del solfeo

porque la armonía es immanente y no ha menester el auxilio de los acordes para manifestarse, pudiendo ser sucesiva tan bien como simultánea. Por tanto, un curso completo de solfeo, tal como los de Dannhauser o Lavignac, hubiera sido una excelente preparación para él antes de abordar el estudio de la armonía.

EL FACTOR ECONÓMICO.

La carrera musical considerada como industria nacional. Punto de vista del comerciante. Dinero producido por conciertos, lecciones de música, teatros musicales, y dinero producido por el trigo, el algodón, las armas de fuego, etc.

Dependencia musical de América en relación con las fuentes de producción europea. El balance del comercio musical. El volumen del comercio musical en los Estados Unidos. Los gobernantes sensatos deberían mejorar los métodos de enseñanza, introducir buenos profesores y, de este modo, detener la importación de músicos extranjeros. La falta de ambiente artístico es, en parte, la causa de que emigren a Europa los mejores americanos.

Antes de la fundación de nuestro Conservatorio de Música de Panamá, once años atrás, la cultura musical no existía en nuestra ciudad. Ella se hizo posible porque el Gobierno emprendió la tarea de fomentarla abriendo un Conservatorio público cuya misión ha sido la de formar en el público el gusto musical y dar a los alumnos la destreza técnica. Me permito llamar la atención hacia este doble carácter de nuestra acción oficial. Nuestro deber era dar la habilidad técnica a nuestros discípulos, pero no vacilamos en tomar además a nuestro cargo los intereses artísticos del público. Nos creíamos en la obligación de proteger tanto a los profesionales como a los que no lo son, contra las hazañas de los especuladores y charlatanes. En este sentido, preparamos el camino al Estado para que asumiese el dominio del teatro, para contribuir a abaratar el precio de entrada y para considerar el movimiento teatral no como un objeto de lucro sino como un medio de contribuir a la educación estética del pueblo.

Así como el Gobierno invierte grandes sumas en mejorar los ríos y los puentes, en poblar las tierras baldías y en la construcción de ferrocarriles que abran nuevos campos a la explotación de la riqueza mineral, todo con el objeto de fomentar la prosperidad nacional, las mismas razones pueden aducirse en pro de los legítimos intereses de los músicos nacionales y del mayor número de los ciudadanos.

El libre cambio y la "puerta abierta" son medidas convenientes entre países capaces de competir en condiciones iguales; pero en donde las industrias domésticas no pueden resistir la competencia extranjera, es indudable que tales doctrinas son suicidas.

Considerando la profesión musical como una industria nacional, independientemente de su valor estético, los americanos podrían asumir a su respecto la actitud del negociante y aplicarle el mismo criterio que al comercio y a la industria manufacturera.

La cantidad de dinero que sale de América anualmente en forma de honorarios a artistas y profesores extranjeros quedaría en el país y enriquecería a los artistas y profesores nacionales si la instrucción musical estuviera organizada de manera que satisficiera completamente las necesidades de la población; si, por ejemplo, se hallase a la altura de la instrucción científica y literaria.

Cuando una enseñanza especial, como la de la música, afecta a tantos millares de ciudadanos como lo demuestran las estadísticas americanas, no es dable a un gobierno democrático permanecer quieto y silencioso respecto de sus defectos e imperfecciones.

Quien quiera que diga que los americanos no son artistas o que carecen de talento artístico asevera una falsedad. No hay campo de las bellas artes o de la música en donde los americanos no hayan obtenido triunfos ruidosos. Pero la falta de facilidades para cultivar el talento artístico en todas las clases sociales ha cerrado esta carrera a las aspiraciones de las personas pobres.

El dinero producido por los conciertos, los teatros, obras de pintura, lecciones de música, etc., es tan bueno como el que proviene del trigo, de la exportación de

algodón, de la fabricación de armas y municiones etc., y es difícil de comprender el motivo por el cual se aspira a aumentar la última clase de producción en tanto que se mira con indiferencia la primera: la producción de artistas y profesores capaces de proveer a las necesidades estéticas nacionales sin necesidad de importarlos. Cuando este resultado se haya obtenido, entonces la independencia de los Estados Unidos en materia artística será un hecho cumplido.

Que Estados Unidos dependen de Europa en materia de música ha sido puesto en evidencia por la guerra actual. Citaré algunos ejemplos: la Compañía de Ópera de Chicago, la Compañía de Ópera de Filadelfia, la Compañía de Ópera de Boston, la "Century Ópera Company," dejaron de existir a consecuencia de la guerra. Igual causa motivó la interrupción de la Compañía de Ópera Francesa de Nueva Orleans.

Si América hubiese producido suficientes ejecutantes y cantores de primer orden para llenar los claros causados por las necesidades militares de los beligerantes europeos, tales fracasos no se habrían producido.

No es que no haya suficientes músicos en América. Es que debido a la falta de un alto nivel en la instrucción musical, las estrellas americanas de primera magnitud son relativamente pocas. Al propio tiempo, como la mayoría del público americano no ha disfrutado del beneficio de los conciertos y los maestros de primer orden por razón de sus precios prohibitivos, el criterio general no está educado y tiene forzosamente que fundarse en la opinión europea para formar la reputación de los artistas. A menudo oímos decir o leemos que los americanos no aceptan artistas del teatro lírico o del género de conciertos si no traen el sello de la consagración europea.

Los periódicos musicales de Norte América se hacen eco de un clamor general contra la injusta desigualdad que se observa en los Estados Unidos entre los músicos americanos y los extranjeros. La cuna italiana, francesa o alemana ejerce una especie de influjo mágico sobre el criterio americano, esclavo de este prejuicio, dificultando las aspiraciones de los profesionales del país y provocando continuas protestas en la prensa contra tan antipatriótico estado de cosas. Profundizando la cuestión, vemos que si, por una parte, las quejas de los periódicos son justas, por otra parte el público americano tiene razón para desconfiar por instinto de los músicos de fabricación doméstica.

La excesiva confianza en la iniciativa particular y la completa falta de intervención del Estado, son las causas que han creado la presente situación. En verdad, las escuelas de música americanas requieren algún tratamiento parecido al que prescriben los organizadores de este Congreso para mejorar las escuelas de Medicina en Norte América.

Si los Estados Unidos forman una nación independiente en el sentido político, industrial y comercial, capaz de proveer a sus propias necesidades y de exportar el sobrante, respecto de bellas artes permanecen aun en la condición de colonia europea, porque en este terreno reemplazaron el proteccionismo, base de todo su sistema económico, por el libre cambio o "la puerta abierta," doctrina cuyos resultados han sido precisamente los mismos que los sagaces economistas americanos trataron de evitar a la agricultura y a las industrias nacionales.

Entretanto, si las estadísticas pudieran demostrar qué sumas de dinero exportan anualmente a Europa los cantores de ópera que vienen a América contratados, los profesores de música que envían sus ahorros a su patria, los jóvenes músicos americanos que estudian en el exterior, y los agentes teatrales europeos que emprenden giras por América, no hay duda de que el balance del comercio musical arrojaría un déficit enorme contra los americanos. Insisto en sostener que los americanos no son productores de arte, sencillamente porque ellos no han sido preparados para ello y no por falta de materia prima. No hay razón para que ellos no puedan producir arte del mismo modo que producen maíz y manzanas de primera clase, pólvora y dinamita. El proteccionismo puede obrar aquí lo mismo que en la agricultura y las manufacturas nacionales.

Según Mr. J. C. Freund, editor de "Musical America," la población de los Estados Unidos gastó en 1913 más de seiscientos millones en música, la tercera parte de cuya suma fué invertida en instrucción musical; es decir, más de lo que el gobierno americano gasta anualmente en el ejército y la marina. Cuando las actividades musicales de una nación han alcanzado tales proporciones, el gobierno estaría más que justificado considerando el asunto como cuestión de interés público.

No sé si Loria, el economista italiano, tiene o no razón cuando dice que "la competencia libre es una ayuda para los astutos y los pícaros;" pero, sea como fuere, la historia industrial y económica de los Estados Unidos es el mejor ejemplo de lo que el proteccionismo puede en bien de una nación.

El principio de los economistas liberales: "laissez-faire, laissez passer," resulta, aplicado a cuestiones de arte, una fuente de desigualdad e injusticias.

Los principios experimentados con tanto éxito por los estadistas ingleses en el desarrollo de la industria y el comercio inglés no les han dado iguales resultados en el terreno del arte. La música no es una industria, pero permítasenos recordar que la música es una fase del problema económico de la nación. El importe de los negocios musicales en los Estados Unidos pasó de seiscientos millones en 1913 y la cuestión debe ser tratada por consiguiente conforme a los métodos económicos y comerciales.

Los Estados Unidos no importan médicos, abogados ni ingenieros, ¿porqué han de importar músicos? ¿Será porque la instrucción musical superior no satisface en América por lo que los productos musicales de primera clase tienen que ser fabricados todavía en Europa? Si este es el caso, el empeño de los estadistas americanos que quieran dedicar atención a este importante asunto, ha de consistir en mejorar el sistema y los métodos de enseñanza introduciendo los mejores profesores y tratando de proveer el mercado propio de buenos productos musicales a fin de poner término a la inmigración forzosa de elementos extranjeros.

Por último, no sería absurdo imputar a la falta de ambiente artístico la fiebre de emigrar a Europa, de que son presa los americanos. En la vida nacional, la música y las bellas artes desempeñan papel semejante al que corresponde a las mujeres en el hogar. Ellas decoran nuestra mansión dándole por doquiera toques de gracia y de belleza y llenándola de atractivos y de encantos. Sin duda el halago del refinamiento artístico europeo tiene algo que ver con esa tendencia de poseer bienes raíces en los Estados Unidos y residir en Europa, tan común a cierto elemento americano. Y podemos dar por sentado que ese elemento no es ciertamente el menos valioso de la nación americana.

LA MÚSICA EN PANAMÁ.

La obra del Conservatorio Nacional de Música y Declamación. Su analogía con la labor social de ciertas Universidades americanas demostrada por su actividad en (a) el terreno teatral, (b) los conciertos sinfónicos, (c) los conciertos de música de cámara, (d) las bandas militares, (e) las escuelas públicas, y (f) como agente de Panamericanismo.

El Conservatorio Nacional de Música y Declamación de Panamá se propuso no sólo la educación de los alumnos sino también la del auditorio. Formar músicos profesionales y descuidar entretanto la preparación artística de quienes deben serlos y juzgarlos, parecía absurdo. Hemos tratado de evitar este error por medio de frecuentes conciertos de libre acceso para el público.

Sería un dislate impartir instrucción musical en el conservatorio sin establecer vínculos naturales entre éste y las instituciones oficiales en las cuales de un modo u otro se hace uso de la música: Teatro, bandas militares, escuelas públicas.

Pensamos también que un Conservatorio Nacional de Música dejaría de llenar su misión de alta cultura si su influencia educadora no se hiciese sentir sobre el gusto y el criterio musical del público.

Nuestro Conservatorio de Música ha extendido así su influencia a otras instituciones, como las escuelas públicas, el Teatro Nacional y las bandas militares, penetrando en

un campo enteramente nuevo para un simple Conservatorio, pero el plan surgió espontáneamente de las necesidades locales bajo la presión de aspiraciones patrióticas que nos impulsaron a servir a nuestros compatriotas aun en contra de sus mismos deseos. Con tan vasto radio de acción, nuestro conservatorio difiere naturalmente del tipo clásico del Conservatorio europeo. Ha reunido bajo una sola dirección muchas cosas que en otros países actúan separadamente y de este empeño en dominar y dirigir la vida musical de nuestro país, nace su analogía con algunas Universidades americanas del Oeste.

Estas doctas corporaciones no se han limitado a la disciplina intelectual superior o a la habilidad profesional; ellas han abrigado propósitos de más vastos alcances. Han perseguido el adelanto social, financiero y agrícola de la comunidad, creando de este modo una nueva forma de instrucción muy superior a la clásica porque la animan el espíritu público y la aspiración nacional. Nuestro Conservatorio de Música difiere tanto de los Conservatorios europeos cuanto difieren las Universidades americanas de las de Europa; tributario de Francia por el principio de la propiedad oficial que es su base, procede de los métodos americanos en algunas de sus más fecundas iniciativas.

A. *El terreno teatral.*—La construcción del Teatro Nacional, terminada en 1908, nos impuso el deber de abastecer el elemento artístico más necesario para el funcionamiento de dicho teatro. Erigir éste en un lugar desprovisto de un núcleo instrumental que pudiera suministrar los cimientos de una futura orquesta, habría sido una temeridad, y llegamos a pensar que mientras el ámbito del teatro no fuese llenado por los acentos de nuestros cantores y ejecutantes nacionales, no teníamos el derecho de decir que la vida artística había sido inculcada al pueblo istmeño ni que el Conservatorio de Música había cumplido su misión y su destino.

No es creíble que un Teatro Nacional se construya para provecho exclusivo de los agentes extranjeros que visitan la ciudad de vez en cuando, sino para estimular el arte y la cultura nacionales. Este último resultado jamás podrá obtenerse si los teatros nacionales y los conservatorios oficiales de música no se unen con estrechos lazos. Estas últimas instituciones son la antesala natural de los teatros nacionales. Están llamadas a guiar o dirigir artísticamente los teatros porque una y otros están identificados en comunes propósitos de naturaleza altruista. El Gobierno, como entidad moral, no puede proponerse otro fin legítimo que el de la educación artística y ésta solo puede alcanzarse haciendo todo lo contrario de lo que hacen generalmente las compañías transhumantes. Estas se limitan a explotar las peores inclinaciones y a corromper el gusto de las masas haciendo del arte un tráfico, no una religión.

A la dirección del Conservatorio de Música de Panamá se adscribió la del Teatro Nacional por Decreto Ejecutivo No. 2 de 16 de enero de 1908. Pero poco después subió al poder un nuevo partido político que estimó conveniente destruir hasta la labor artística llevada a efecto por su predecesor, según la máxima "los despojos pertenecen al vencedor." Sin embargo, dos años más tarde volvía a concederse el mismo privilegio al Conservatorio de Música por medio de una ley especial, votada por la Asamblea Nacional, que vinculaba ambas instituciones: Teatro y Conservatorio.

En cumplimiento de las disposiciones de la ley, abríese en el Conservatorio de Música una clase de ópera cuyo objeto debía ser el de "promover representaciones de carácter lírico o dramático en el Teatro Nacional" (art. 4, Ley No. 46 de 1910). De consiguiente, en febrero de 1912 los alumnos de esta nueva clase cantaron dos actos de Fausto, de Gounod, y en septiembre del mismo año la ópera entera fué montada y representada dos veces, como se narra más adelante.

Antes de que el Conservatorio de Música diera estas representaciones, el Teatro Nacional registraba cuatro representaciones de la misma ópera dadas por compañías extranjeras, como se expresa en seguida: la primera en noviembre 7 de 1908, por la Compañía de Ópera Lambardi; la segunda en noviembre 22 de 1908, por la Compañía Ópera de Lambardi; la tercera en abril 9 de 1910, por la Compañía de Ópera Sigaldi; la cuarta en junio 2 de 1910, por una nueva Compañía de Ópera Lambardi.

En consecuencia, ocupamos el quinto y sexto lugares en septiembre de 1912, y, desde entonces, ninguna compañía de ópera ha pretendido representar la misma ópera en Panamá.

Los motivos de esta abstención se comprenderán fácilmente en presencia de los siguientes datos:

(a) *Partes principales*.—El número de artistas principales fué el mismo en todas las ocasiones, pero debo confesar, en obsequio de la verdad, que si la experiencia individual y el mérito artístico han de tomarse en cuenta, las compañías extranjeras sobrepusieron en mucho a la nuestra, compuesta toda de alumnos. Sin embargo, esta inferioridad fué grandemente compensada por la perfección del conjunto y el acabado de los detalles, obtenidos mediante tal cantidad de ensayos que resulta imposible para una compañía de tránsito.

(b) *Coros*.—En cuanto a los coros, su número en cada ocasión fué como sigue: Primera representación (Lambardi), 1908, 20 voces; segunda representación (Lambardi), 1908, 20 voces; tercera representación (Sigaldi), 1910, 12 voces; cuarta representación (Lambardi), 1910, 15 voces; quinta representación (Conservatorio), 1912, 50 voces; sexta representación (Conservatorio), 1912, 50 voces.

Nuestra masa coral excedía en más del doble el número de voces de las de las compañías extranjeras.

(c) *Orquesta*.—La orquesta constaba en cada vez de los siguientes elementos: Primera representación (Lambardi), 1908, 19 personas; segunda representación (Lambardi), 1908, 19 personas; tercera representación (Sigaldi), 1910, 16 personas; cuarta representación (Lambardi), 1910, 18 personas; quinta representación (Conservatorio), 1912, 53 personas; sexta representación (Conservatorio), 1912, 53 personas.

Estas dos últimas fueron las únicas representaciones en las cuales no se hizo uso del piano para llenar los claros de la orquesta. Nuestras masas orquestales fueron siempre tres veces más numerosas que las suministradas por compañías extranjeras.

(d) *Asistencia*.—El público de Panamá pagó en la taquilla del Teatro Nacional, en cada representación de Fausto, las siguientes sumas por derecho de entrada:

Primera representación, oro americano.....	\$912. 00
Segunda representación, oro americano.....	282. 00
Tercera representación, oro americano.....	1, 023. 50
Cuarta representación, oro americano.....	528. 00
	\$2, 765. 50

Quinta representación, gratis.

Sexta representación, gratis.

Las representaciones de Fausto dadas por las compañías extranjeras costaron al público panameño un promedio de \$691.32, mientras que las efectuadas por el Conservatorio Nacional de Música fueron gratuitas.

Además de los detalles aquí mencionados, la "mise en scène," el vestuario, las decoraciones, etc., fueron tan completas en nuestras representaciones que toda comparación en este sentido era desfavorable a las compañías extranjeras. Un detalle importante: los principales papeles fueron interpretados, en proporciones iguales, por alumnos panameños y americanos. Fausto, Valentín y Mefistófeles eran panameños, en tanto que Margarita, Siebel y Marta eran americanas.

Pocos días después de estas representaciones la situación política sufrió nuevo cambio. Un nuevo partido ascendió al Poder y con este motivo la Asamblea Nacional trató de destruir la labor efectuada por ese mismo cuerpo en 1910. El Teatro Nacional y el Conservatorio volvieron a divorciarse por obra de una nueva ley que estableció que en lo sucesivo estas instituciones serían recíprocamente independientes, y, desde entonces, esa es nuestra situación legal respecto de actividad teatral.

B. *Los conciertos sinfónicos*.—Panamá, nuestra ciudad capital, había tenido repetidas ocasiones de ver y oír representaciones de ópera más o menos incompletas antes de que el Conservatorio de Música montase el Fausto con elementos propios, pero

jamás había gozado del mismo beneficio respecto de conciertos sinfónicos. Ninguna orquesta sinfónica ha pretendido desembarcar jamás en Panamá, de modo que no hay comparación posible entre nuestros propios conciertos y los dados por supuestas orquestas del exterior. Si se hubiese hecho un ensayo, el resultado habría sido igual al obtenido respecto de las compañías de ópera: a saber, que Panamá goza gratuitamente, gracias al Conservatorio Nacional de Música, de lo que de otro modo le costaría fuertes sumas de dinero.

El Coronel Higginson, fundador y capitalista de la Orquesta Sinfónica de Boston, sabe algo del costo anual de una asociación sinfónica. Otro tanto puede decirse de Mr. Harkness Flagler, protector de la Sociedad Sinfónica de Nueva York.

En 1909 se hizo la primera tentativa para organizar una orquesta sinfónica en la ciudad de Panamá. La Sociedad de Conciertos del Conservatorio fué creada entonces y el Concejo Municipal subvencionaba la empresa comprando billetes de entrada por valor de \$100 en cada concierto.

Fuera de los profesores y alumnos, la sociedad contaba con cierto número de socios auxiliares.

Dió 10 conciertos cuyas fechas y entradas aparecen en el siguiente cuadro:

Concierto.	Fecha.	Producto.	Concierto.	Fecha.	Producto.
1.....	Febrero 22 de 1910.....	\$233. 75	8.....	Febrero 11 de 1911.....	\$279. 00
2.....	Mayo 3 de 1910.....	126. 75	9.....	Julio 15 de 1911.....	(1)
3.....	Julio 29 de 1910.....	264. 75	10.....	Noviembre 2 de 1911.....	100. 75
4.....	Octubre 21 de 1910.....	\$291. 45			
5.....	Diciembre 4 de 1910.....	(1)			
6.....	Enero 21 de 1911.....	120. 20		Abrasan un periodo de 21	
7.....	Enero 22 de 1911.....	133. 35		meses.....	1.435. 10

¹ Concierto de beneficencia.

El concejo municipal retiró luego el auxilio por razones de economía y la Sociedad de Conciertos tornó a probar fortuna una vez más el 15 de junio de 1912, percibiendo tan sólo \$36.16 de entradas, fracaso que hizo comprender la esterilidad de todo esfuerzo por hacer revivir la sociedad.

Además, a fines de 1912 la Asamblea Nacional que había disociado el Conservatorio del Teatro Nacional, prescribió en el artículo 3 de la Ley No. 1 de 1915 que la Sociedad de Conciertos no tuviese vínculos de ninguna clase con el conservatorio y que se les considerase en adelante como dos entidades extrañas. Pero a pesar de que los políticos municipales y nacionales no hallaban mejor oficio que cavar la fosa de nuestros conciertos sinfónicos, nosotros, los músicos, resolvimos no permitir que se llevara a cabo semejante desaguisado y, aunque se disolvió la sociedad, los conciertos fueron reanudados en el Conservatorio con la sólo diferencia de que continuaron efectuándose semanalmente, los lunes en la noche, y no cada dos meses como anteriormente, amén de que la entrada, lejos de ser onerosa, como antes, fué desde ese momento enteramente gratuita para el público.

Sin embargo, en 1914 decidimos que nuestros conciertos se compondrían principalmente de música de cámara, como se verá en el capítulo siguiente, efectuándose los conciertos sinfónicos tan sólo una vez al mes. Esta es la práctica que hemos venido observando hasta aquí.

C. *Los conciertos de música de cámara.*—Panamá tuvo ocasión de escuchar una vez música de cámara antes que el Conservatorio iniciase sus conciertos del lunes. Esto aconteció en 1909 gracias al "London Sextet" que dirigía A. Fernández Aspra. El producto neto de los tres conciertos dió un total de \$226.55. Dichos conciertos fueron exclusivamente instrumentales. Los cuartetos de Beethoven formaban la base de los programas, los cuales interesaban apenas a una minoría de conoedores. De ahí la insignificancia de las entradas.

Nuestros conciertos de los lunes principiaron el 3 de junio de 1912 incluyendo cuartetos de cuerda, tríos, quintetos, sonatas y números de canto.

Posteriormente se introdujeron números sinfónicos, como se demuestra en el capítulo precedente, habiendo dado el Conservatorio de Música hasta el presente 110 conciertos, todos gratuitos para el público sin distinciones de ninguna clase.

Los conocedores de Panamá (evito intencionalmente emplear la palabra público) pagaron en 1909 una suma de \$226.55, oro americano, por tres conciertos de música de cámara, mientras que desde el 3 de junio de 1912 el público panameño ha disfrutado gratuitamente de 110 conciertos de música de cámara dados por el Conservatorio de Música.

D. Las bandas militares.—El Decreto Ejecutivo No. 23 de 1904, que creó el Conservatorio de Música de Panamá dispuso en su artículo 4 que en la sección instrumental se instituiría un curso especial destinado a la instrucción artística de los músicos de la Banda del Ejército (en aquel tiempo aún tenía Ejército Panamá) y a la formación de una banda militar de primer orden.

Con todo, tal disposición no fué cumplida sino en 1912, cuando el Conservatorio de Música entró a ejercer influencia sobre la Banda Nacional.

Antes de esto, la Banda estaba compuesta de menos de 34 músicos de los cuales sólo 5 eran panameños, lo que daba un tanto por ciento muy pequeño en favor del elemento nacional. En febrero de 1912 se abrió un concurso para proveer la Banda de director, y un discípulo de nuestra clase de instrumentación de música militar ganó la plaza. Desde entonces todos los miembros de la banda cuyos conocimientos musicales eran insuficientes fueron obligados a cursar en el Conservatorio ya en las clases instrumentales, ya en las de solfeo y teoría, armonía o instrumentación.

La ley 1ª de 1913, arriba mencionada, destruyó la unión del Conservatorio y la Banda Republicana, lo mismo que destruyó la del conservatorio y el teatro. Empero, los progresos de la banda indujeron al Gobierno a no romper del todo las relaciones entre ambas entidades y los músicos siguieron estudiando en el Conservatorio, como antes.

Además, la ley 46 de 1910 estatufa en su artículo 8 que el Conservatorio de Música conferiría, a pedido del Poder Ejecutivo, diplomas para directores de bandas militares, previo examen especial cuyo programa establecerían, de común acuerdo, la Secretaría de Instrucción Pública y el Director del Conservatorio. Esta disposición no ha sido derogada por leyes posteriores y permanece vigente.

Pero hasta el presente la única persona que ha sacado partido de esta oportunidad es el actual director de la banda. Los músicos de ésta podrán, sin embargo, aspirar al diploma tan pronto como su aprendizaje instrumental, de armonía e instrumentación los capacite para ello. De aquí resultará que en pocos años la Banda Nacional estará toda formada de músicos competentes y maestros consumados.

Antes de que el Conservatorio interviniera en la Banda Nacional, el número de panameños que en ella figuraban era de cinco, contra veintinueve extranjeros, o sea un 14 por ciento. Hoy el número de panameños en la misma banda es de 21 sobre un total de 50, o sea 42 por ciento.

Se me ha informado que el Gobierno de los Estados Unidos, por conducto de la Secretaría de Guerra, ha celebrado un convenio con una institución musical de la ciudad de Nueva York mediante el cual dicha institución recibe cierta suma de dinero por la enseñanza musical de diez directores de banda destinados a servir en el ejército americano. Entiendo que esto significa una subvención per capita para que durante dos años los alumnos adquirieran los conocimientos y la práctica necesaria para llegar a ser directores competentes.

Este mismo servicio lo presta gratuitamente el Conservatorio Nacional de Música al Gobierno de Panamá. La diferencia consiste en que, en lugar de 10 alumnos, todos los miembros de la Banda, esto es, cincuenta personas, reciben enseñanza en el Conservatorio libre de todo gasto.

E. Las escuelas públicas.—Desde 1903 la República de Panamá admitió la música en el *pensum* de las escuelas primarias; mas, a decir verdad, sólo como materia de

diversión para maestros y discípulos, pues se la trataba a la par con el baile. Algunas canciones, tan mal escogidas en su letra como en su música, enseñábanse de oídas a los niños; pero en realidad, la enseñanza musical propiamente dicha no comenzó a impartirse a los alumnos sino en 1910, cuando se le dió al Conservatorio voz en el capítulo.

La ley 46, del mismo año, dispuso en su artículo 5 que el Conservatorio conferiría certificados oficiales de aptitud para la enseñanza del canto escolar, y que los poseedores de esos certificados serían preferidos por el Gobierno para las plazas de maestros especiales. El artículo 7 de la misma ley también dice: "El Gobierno hará que concurren a las clases de solfeo del Conservatorio los alumnos de las escuelas nacionales que manifiesten disposiciones musicales dignas de especial cultivo." Esta ley fué expedida en 1910, y en 1911 y 1912 se practicaron trece exámenes de aspirantes al certificado de aptitud. Nueve aspirantes lo obtuvieron y cuatro fracasaron. Las pruebas de los exámenes eran muy semejantes a las que rigen en París en los concursos de maestros de canto para las escuelas comunales, aunque menos exigentes, por supuesto. La Asamblea Nacional de 1912 no trató de abolir estos certificados, pero como desde a fines de 1912 la enseñanza musical de las escuelas fué confiada a personas que no poseían los certificados oficiales, la demanda de estos naturalmente disminuyó en tal proporción que un solo aspirante se presentó en 1913, ninguno en 1914 y otro en el presente año de 1915.

Nosotros pretendemos haber resuelto el problema de la unificación de la enseñanza (*standardization*) sin infringir perjuicios a la enseñanza privada o a los derechos individuales. El Gobierno, por conducto del Conservatorio, confiere certificados oficiales que, según la ley, dan a sus poseedores preferencia sobre otros aspirantes a las plazas de maestros de música en las escuelas públicas, pero sin conferirles monopolio.

F. *Como agente de panamericanismo.*—Nuestros conciertos, clases y ensayos fueron campo abierto al cultivo de relaciones amistosas entre panameños y americanos.

Cooperando con entusiasmo a nuestras empresas en pro de la cultura musical, alternando en la orquesta y el coro con nuestros elementos locales sin distinción de raza ni de colores, nuestros vecinos de la Zona dieron ejemplo de solidaridad artística que echó por tierra más de un odioso prejuicio local a que la mente de nuestro pueblo los asociaba.

La obra de sociabilidad y mutuo conocimiento que a la sombra del Conservatorio ha venido cumpliéndose, es la prueba más convincente de la influencia que el arte ejerce en las relaciones de los pueblos.

Mis funciones de director del Conservatorio Nacional de Música de Panamá me han permitido llegar a la conclusión de que el amor al arte y una alta aspiración hacia la carrera musical son rasgos característicos en la mujer americana.

El privilegio de estudiar música (no romanzas banales ni vulgares rag-times, sino música seria y clásica) nunca fué mejor estimado que por las americanas de la Zona del Canal. Y sería injusto atribuir a la gratuidad de nuestra enseñanza la única razón de su entusiasmo, porque muchas de ellas atravesaban el Istmo cuatro veces en la semana, gastaban fuertes sumas en transporte por ferrocarril, perdían cada vez todo el día en la ciudad de Panamá y pagaban sus alimentos en hoteles o clubs.

Los obstáculos nunca las deprimían. El último tren de Panamá a Colón salía a las 10.30 de la noche, pero a fin de aprovechar nuestros ensayos de orquesta, que a la sazón se efectuaban de noche, varias alumnas americanas viajaban a caballo por las carreteras de la Zona. Los automóviles no eran entonces de uso tan general como hoy.

Una señora de edad vino un día de la Zona del Canal y me preguntó "¿Es ésta la escuela donde se enseña música de balde?" Contesté que sí. Pareció encantada y abismada a la vez de que tal maravilla existiera bajo el sol. Pero después de hojear nuestro reglamento e informarse que no se admitían principiantes mayores de quince años, se mostró indignada y protestó en nombre de la equidad contra lo que ella calificó de "medida mezquina." La Señora no tenía ciertamente menos de cincuenta años.

La avidez con que los americanos residentes en el Istmo se inscriben en los registros de admisión del Conservatorio de Panamá, el interés con que aprovechan esa inesperada ocasión, su innegable superioridad sobre los alumnos panameños en punto de asistencia regular y fuerza de voluntad para dominar toda clase de obstáculos, son indicios suficientes de que comprenden ya esta necesidad por largo tiempo sentida y nunca satisfecha, y aprecian en cuanto vale esta oportunidad de que carecen en su propia tierra.

Los alumnos panameños tienen en los americanos el mejor ejemplo de consagración al deber, fuerza de voluntad y determinación para realizar altos fines.

De un total de mil cien alumnos, doscientos americanos, más o menos, han sido matriculados en nuestro Conservatorio de Música. Si la gran mayoría de ellos no ha adoptado la música como profesión, ello se debe a las condiciones especiales en las cuales se hallaban los americanos en la Zona del Canal. Nunca sabían de antemano por cuanto tiempo utilizaría el Gobierno sus servicios y, por regla general, sus hijas, hijos, esposas o hermanas matriculados en el Conservatorio tenían que interrumpir súbitamente su educación musical cuando el padre, el marido o el hermano cesaban de trabajar al servicio de la Comisión del Canal Istmico. Una sola alumna tuvo la fortuna de terminar sus estudios en las clases de canto y ópera. Pero muy pocas de entre ellas emprendían el estudio como mera distracción, quiero decir fuera de toda aspiración profesional. Esas pocas eran damas emparentadas con altos oficiales de la Comisión del Canal Istmico, quienes contribuían notablemente al esplendor social de los conciertos y cuyo trato personal será siempre una de nuestras más gratas reminiscencias: Miss Aileen Gorgas, hija del Brigadier General W. C. Gorgas, a la sazón encargado del Departamento de Sanidad de la Comisión del Canal Istmico; Mrs. Maurice H. Thatcher, esposa del Jefe del Departamento Civil de la Comisión; Mrs. Charles L. Mason, esposa del Oficial Superior de Sanidad de la Zona del Canal; Mrs. Wesley M. Oven, esposa de uno de los jueces de distrito de la misma zona.

Tengo que reivindicar aquí, en favor de nuestro Conservatorio de Música, su condición de baluarte del Panamericanismo en la América Central.

Admitiendo gran cantidad de alumnos americanos, es indudable que hemos propendido a crear buena voluntad y amistad entre nosotros y los residentes de la Zona del Canal, procediendo *motu proprio* como una rama de la Unión Panamericana. Hemos contribuido a desarrollar el gusto por la música en la zona y, al proceder así, hemos comprendido que la música en nuestros días no ha perdido nada de su antiguo poder mágico. Como en los tiempos de Anfión en Tebas, la música contemporánea ha demostrado su eficacia, si indirecta no menos eficaz, en la construcción de las modernas ciudades; y mal podía ella dejar de fomentar la armonía y la buena inteligencia entre los constructores del canal.

El Conservatorio de Música de Panamá es una institución ya familiar a dos de los directores del Segundo Congreso Científico Panamericano: el Brigadier General W. C. Gorgas, cuya propia hija, según hemos manifestado arriba, fué una de nuestras alumnas, y el Dr. Leo S. Rowe, asiduo visitante de nuestros conciertos de los lunes mientras fué miembro de la Comisión Mixta nombrada por los Gobiernos americano y panameño en virtud de las estipulaciones del tratado del canal.

He dedicado tiempo e ideas a la redacción de este escrito con amigables propósitos en mira, y me sentiré altamente complacido si mi trabajo deja traslucir el interés que tomamos los hispanoamericanos en los asuntos norte americanos. Como ciudadano de la más joven de las Repúblicas americanas, he querido mostrar aquí no sólo palabras o teorías, sino los resultados de mi propia obra y de mi experiencia, en una palabra: "hechos," en la esperanza de que estos resulten de utilidad práctica para los Estados Unidos y las naciones de la América Latina donde prevalece la doctrina del "libre cambio" en el arte. Por razón de su posición geográfica, que es una bendición de Dios, nuestro país está destinado a ser el foco de la solidaridad continental; y el propio nombre "Panamá" es ya presagio de panamericanismo.

CONCLUSIONES.

I. La profesión musical debería enseñarse por empleados de la Nación, del Estado o del municipio en Conservatorio o escuelas profesionales en donde la instrucción debiera ser gratuita, siendo el cuerpo de profesores cuidadosamente seleccionado y el número de alumnos restringido a unos pocos cuya admisión fuese objeto de severos exámenes u oposiciones. Estas escuelas gubernativas no deberían perjudicar los intereses de los Conservatorios privados, organizados sobre bases onerosas; por el contrario, deberían concurrir con ellos a un empeño común de elevar el nivel musical del país.

II. Los teatros en donde se representa el drama, la comedia y la tragedia de elevado estilo literario, y aquellos en los cuales se representa la grande ópera o el drama lírico, deberían pertenecer a la nación, al gobierno del Estado o al del municipio, al igual de los museos, las bibliotecas y otros centros de cultura.

III. Los conservatorios oficiales o escuelas profesionales de música, deberían consagrarse no sólo a dar instrucción técnica a los alumnos sino a iniciar al público en el arte por medio de conciertos frecuentes de música sinfónica, de cámara, sagrada y dramática, sin perseguir otro fin que el de cumplir una misión de interés general.

IV. El derecho de practicar exámenes o concursos para llenar las vacantes en las bandas militares del Ejército y la Marina, en las escuelas Públicas (clases especiales de música) y en los teatros oficiales, corresponde a las escuelas gubernativas de música, y su derecho de expedir diplomas oficiales de idoneidad en cualquier ramo de la música no debería menoscabar en parte alguna el derecho de los Conservatorios particulares a expedir certificados o diplomas privados como han venido haciéndolo hasta el presente.

V. La enseñanza musical por medio del "do movable" o "tonic-solfa" debería abandonarse. El "Solfeo" sirve mejor los intereses de la música y del desarrollo artístico en general.

VI. Incumbe a los Conservatorios oficiales o a las escuelas musicales crear un elemento artístico apto para dar abasto a las necesidades de los teatros nacionales: actores para la comedia y el drama; cantores, ejecutantes y bailarinas para el drama lírico y la ópera.

VII. El Estado debería estimular la fundación de sindicatos profesionales o cooperativas musicales encaminadas a liberar a los artistas de los usurarios impuestos establecidos sobre ellos por ciertos agentes e intermediarios.

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EL PROBLEMA DE LA EDUCACIÓN EN EL ECUADOR.

Por ALFREDO ESPINOSA TAMAYO,
Guayaquil, Ecuador.

Con un título análogo al del presente estudio escribió otro hace cerca de cuarenta años en el Uruguay, su patria, el ilustre propagandista y pensador don José Pedro Varela. No es que yo trate de emular con la publicación de las presentes líneas las glorias del insigne reformador de la enseñanza en la República Oriental, sino que el Ecuador, como otros países que se le han adelantado en el camino de la reforma pedagógica de su educación, necesita saber a punto fijo cuáles son sus necesidades actuales, cuáles sus deficiencias y cuál el camino seguro y recto que ha de tomar para llegar a aumentar y desarrollar en manera definitiva un plan educativo que se armonice con el espíritu y la mentalidad de su pueblo, permitiéndole escoger entre los diversos sistemas, no el que sea mejor por sus excelencias intrínsecas, sino aquel que de mejor manera eduque al pueblo y lo prepare para la vida cívica y la lucha por la existencia. En los últimos tiempos y a la sombra de gobiernos que han tratado de impulsar la instrucción pública algunos de los más eminentes políticos, muchos periodistas pensadores e intelectuales del país, se han dado a pensar y a discurrir en los medios que se pondrán en juego para llevar a cabo su regeneración proponiéndose multitud de planes, leyes y reformas, algunas de las cuales han sido consideradas como demasiado avanzadas para el actual estado del país por cuanto el progreso no se hace por saltos. Existe una juventud entusiasta y ardorosa que cree sinceramente y está convencida de ello, que sólo la educación podrá levantar al país del estado de postración en que actualmente se halla y que por lo mismo es necesario comenzar lo más pronto posible, pues los resultados que se obtengan serán más tardíos mientras más se demoren en comenzar la obra salvadora. Es esa juventud la que más se preocupa por el progreso de la educación y es ella la que impulsa y sostiene el movimiento dándole a cada momento actividad e interés, haciendo que se preocupe la opinión pública de este asunto y que los Gobiernos se vean obligados a prestar atención preferente a tan importante ramo de la administración. En estas circunstancias es natural que aunque el movimiento sea unánime haya divergencia de pareceres en cuanto a los detalles. No trato yo aquí de trazar magistralmente las cuestiones suscitadas; sólo quiero exponer lo que según mi manera de pensar conviene más para nuestras necesidades y las reformas más urgentes que nuestra instrucción pública ha menester para salir del estado ruinoso y atrasado en que se encuentra.

He procurado documentarme lo mejor posible a fin de adquirir el juicio más exacto acerca de nuestras necesidades, y aunque esto es bien difícil en un país como el nuestro, donde no hay establecida una buena estadística escolar, he llenado mi tarea conforme me lo ha permitido el alcance de mis escasas fuerzas.

CAPÍTULO PRIMERO.—OJEADA HISTÓRICA.

Trabajo superior a mis fuerzas sería intentar hacer la historia detallada y extensa del desarrollo de la instrucción pública en el Ecuador. Los mismos historiadores y los más eruditos bibliófilos, rebuscando archivos y haciendo investigaciones, sólo han podido poner en claro ciertos asuntos relacionados con ella. Sigo en estas líneas los relatos que ellos hacen limitándose a transcribir sus afirmaciones.

Como en todos los países sometidos al dominio español, la educación pública no se desarrolló sino muy débilmente, reservándola para la clase privilegiada y limitándola a ciertas ramas del saber.

La instrucción primaria, destinada principalmente al pueblo, era la más descuidada, la instrucción media no existía y a las universidades ingresaban sólo los que por un medio u otro hubieran adquirido particularmente la cultura necesaria. Si algunos raros americanos lograron sobresalir entre sus contemporáneos fué debido al esfuerzo propio o a que podían trasladarse a Europa a estudiar en sus universidades y colegios.

Las suspicacias de los conquistadores por una parte y el tribunal de la inquisición por la otra, limitaban el género de los estudios calificando de heréticos los más útiles y los que hoy constituyen la fuente más segura del progreso y del adelanto. Sin embargo, no es de admirarse de esta manera de ser, y es preciso buscar su explicación más bien en la mentalidad de la raza conquistadora y en el estado de su cultura y de su civilización, al par que en sus características psicológicas, que fácilmente no explican, lo que a primera vista nos parece tiránico y arbitrario.

Cuando los conquistadores españoles terminaron la pacificación del Reino de Quito y comenzaron la tranquila posesión del nuevo territorio adquirido por ellos para la corona de España, organizaron muy rudimentariamente las instituciones administrativas calcándolas casi todas bajo un mismo patrón y adoptando en su mayoría las de la época incaica.

La educación popular no les mereció gran atención: la mayoría de los conquistadores se componía de analfabetos y aún sus jefes no sabían leer ni escribir. Hay que considerar que aunque a fines del siglo XV florecieran las artes y las ciencias, había comenzado con la expulsión de los judíos y de los Árabes la decadencia de España y el analfabetismo era la regla general en aquella nación, en la que aún el porcentaje de éste es uno de los mayores en Europa. No es de admirarse, pues, que los rudos hijos de la madre patria dieran poca importancia a la instrucción del pueblo conquistado, tanto más, cuanto que durante un siglo vivieron con las armas en las manos recelando de la sumisión de sus vasallos.

Sólo hacia mediados del siglo XVII se comienzan a fundar, en los conventos, principalmente en los de Agustinos, Dominicos y Franciscanos, escuelas primarias, donde se enseñaba lectura, escritura y catecismo de la Doctrina Cristiana, y luego en Quito, universidades para la enseñanza de la teología y del derecho, y años después para el de la física y de las matemáticas. Pero si aún en España nuestra metrópoli y a principios del siglo XIX el estudio de las ciencias experimentales era tenido por pernicioso y practicado sólo por los discípulos de los enciclopédicos y libre pensadores, se deducirá que en nuestras universidades los estudios no pasaban del dominio de la teoría escolástica.

En la ciudad de Guayaquil, y por los notables estudios practicados por el erudito historiador, don Camilo Destruge, en su libro "Estudios Históricos," se sabe que la primera escuela que funcionó con carácter público fué la que dirigía don Juan Bautista Portocarrero por los años de 1794. El señor Destruge cuenta en seguida los esfuerzos

hechos primero por las Juntas de Gobierno de 1821 para desarrollar la instrucción pública, y luego por el libertador, quien decretó la fundación de una escuela para maestros en Quito por el sistema de Lancaster, lo mismo que otras en Bogotá y Caracas. Por causa de la muerte del libertador que era amigo suyo y partidario de su sistema creemos que Lancaster no llegó a venir a la Gran Colombia e ignoramos cuál fué la suerte de las escuelas cuya fundación se había decretado.

En la ciudad de Guayaquil, fundáronse ya hacia los años de 1828, escuelas públicas bien establecidas y dirigidas; la de niñas por el notable educacionista don Teodoro Maldonado. Ya desde 1822 fundóse en el Convento de San Agustín un colegio de segunda enseñanza, llamado de San Ignacio, cuyo funcionamiento en sus comienzos fué muy irregular y que más tarde fué dirigido por don Francisco Malo.

Al separarse el Ecuador de la Gran Colombia es probable que el primer Flores atareado siempre en la guerra con Nueva Granada primero, y en dominar revoluciones y rebeldías de sus propios soldados, después, no pudiera atender a fomentar la instrucción en el Estado que acababa de nacer.

Sobrevino luego la Guerra Civil, llamada de los Chihuahuas y después de ella la presidencia del insigne don Vicente Rocafuerte. Fué él quien creó el Colegio Vicente Rocafuerte de Guayaquil, llamándolo entonces de San Vicente. Reorganizó el Colegio de San Fernando de Quito y la Universidad introduciendo los estudios de medicina y dando además gran apoyo a la instrucción primaria.

El tercer presidente, don Vicente Ramón Roca, fué asimismo un mandatario que se ocupó mucho en la instrucción pública del país. Siento no poder precisar las conquistas de la instrucción en este período y me atengo sólo al dicho de los historiadores.

De 1845 a 1859, el país pasó bajo una larga serie de administraciones en que la inquietud revolucionaria fué caso constante. Sin embargo la administración liberal de Urbina no dejó de hacer algo en favor de la enseñanza. Pero fué durante la administración del señor García Moreno que ésta llegó a su mayor auge y apogeo.

Aunque con criterio sectario y quizás impulsado por motivos políticos el señor García Moreno, entregó la enseñanza superior y media a Jesuitas y la enseñanza primaria a otras comunidades religiosas. Pero no hay duda de que, dado el atraso en que entonces nos hallábamos y las ventajas que les daban los Gobiernos apoyándolos decididamente, así como su organización tendente especialmente a los fines educativos, las comunidades religiosas, impulsaron mucho la educación pública. En sus manos estuvo largo tiempo, pues, si el Presidente Veintimilla alejó valiosos elementos de la universidad, en manos de los Jesuitas quedaron los principales colegios de la República. Las administraciones que siguieron a la Restauración de 1883, continuaron prestando su apoyo a estas comunidades. La revolución de 1895 les arrebató la dirección de las escuelas públicas y de los colegios, quitándoles su participación en las universidades.

En 1904 la enseñanza oficial fué declarada completamente laica, bajo cuyo régimen sigue hasta hoy. Poco podríamos puntualizar respecto al ensanche progresivo de la instrucción, ni al espíritu de ella y a los métodos y sistemas que se han ido adoptando; si aún reina hasta hoy una gran confusión sobre ésto y la rutina impera en nuestra educación, es posible creer que poco o nada se adelantará en este camino y que la Nación se mantendrá como hasta hoy se mantiene, alejada del movimiento pedagógico del mundo civilizado, por lo menos en lo que respecta a la mayoría del cuerpo docente de la República.

Puede señalarse que la escuela graduada tal como hoy se comienza a organizar en el Ecuador fué establecida por primera vez por los Hermanos de las Escuelas Cristianas, pues sus escuelas se componían de seis clases o grados distintos de enseñanza, cada uno regido por un profesor. Aún hoy los métodos seguidos no son otros que los que aquéllos empleaban y que con ligeras modificaciones siguen los actuales maestros, discípulos directos de los miembros de aquella congregación educacionista, y los libros de texto que hasta muy recientemente se han empleado en las escuelas públicas, han sido los editados por la misma.

Desde 1895 acá, la instrucción pública ha recibido un gran ensanche y si las reformas que en ellas se han introducido hubieran comenzado por donde debían, es decir, por la educación de un profesorado, al corriente de los métodos y sistemas modernos de educación, indudablemente que la instrucción pública se hallaría en un grado mucho más alto que en el que hoy se encuentra. Tarea muy larga sería reseñar la fundación de los diversos colegios de la República. Muchos de ellos, son debidos a la iniciativa particular y sus bienes proceden de legados que dejaron generosos filántropos.

Del estado actual de la enseñanza pública, podrá juzgarse mediante la exposición que en capítulos posteriores iremos haciendo. Es indudable que en menos de un siglo su progreso ha sido lento, pero continuo. Épocas ha habido, en que los Gobiernos la dejaron abandonada disponiendo a su antojo de las rentas destinadas para ella, mas luego han venido otros que la han mejorado y aumentado.

No podemos alabarnos es verdad, de poseer una educación tan adelantada como la de los pueblos más meridionales de nuestro continente, pero tampoco nos hallamos en estado de inferioridad, respecto de otros pueblos de Sud América.

Desde 1904, el campo de las ideas se ha ensanchado y parece que estamos en un período preparatorio disponiéndonos a entrar con paso firme por el camino de una reforma consciente y metódica.

CAPÍTULO SEGUNDO.—OJEADA GENERAL SOBRE EL ESTADO ACTUAL DE LA ENSEÑANZA.

Un gran escritor militar, creo que Tomini, había dicho que para hacer la guerra era necesario tomar en cuenta tres elementos: los hombres, las armas y el terreno; paralelamente podría decirse de la instrucción pública que ella se hace con los maestros, los locales y el material de enseñanza. Por encima de estos elementos materiales, es necesario poner en cuenta una buena organización y antes que esta a más de corresponder a las necesidades y al carácter del pueblo que se trata de educar, se observe estrictamente y se sepa aplicar con la suficiente amplitud de criterio para que sus disposiciones puedan ser cumplidas sin resistencias ni tropiezos. Desgraciadamente, entre nosotros, la organización que se ha dado a la instrucción pública es defectuosa, pues se ha llevado la descentralización a un extremo tan grande que el poder central ha quedado privado de toda autoridad en frente de las inferiores del ramo y se le ha quitado toda iniciativa no pudiendo ejecutar ni mandar ejecutar por sí misma ninguna mejora o reforma, sin tener que tocar con entidades y corporaciones cuya heterogénea composición las vuelve incapaces para dictaminar sobre asuntos en los que sus miembros no tienen autoridad ni criterio. Para que se conozca la organización actual de nuestra instrucción pública, describiré aunque sea a la ligera la forma en que funciona.

A la cabeza de la instrucción pública está el Consejo de Instrucción Pública presidido por el Ministro del Ramo y con atribuciones para abrir, clausurar y reorganizar escuelas y colegios cuando lo creyera necesario, así como para establecer nuevas enseñanzas en el país, nombrar y contratar profesores, autorizar los presupuestos provinciales y formar el general del ramo y dirigir, en una palabra, la marcha general de la educación pública. El ministro es el ejecutor de las disposiciones de este alto cuerpo directivo. Y en realidad, la ley no le deja sino muy escasas atribuciones que limitan su autoridad a tal extremo que poco o nada le queda por hacer, sobre todo, en la enseñanza primaria. Sometida a su autoridad directa sólo está la enseñanza especial reducida a tres escuelas normales mal organizadas, la Escuela de Bellas Artes, el Conservatorio de Música, la Escuela de Agricultura de Ambato y algunas escuelas de artes y oficios.

Después de la autoridad del Ministro, la ley coloca la de los Consejos Escolares provinciales que vienen a ser derivaciones del Consejo de Instrucción Pública en más pequeña escala y con menores atribuciones; estos consejos, cuya composición es muy heterogénea carecen generalmente de competencia para juzgar las cuestiones relativa

a la enseñanza. Su acción ha sido muy discutida porque, si bien es verdad que en determinadas provincias, los ciudadanos que las componen, aunque extraños a las cuestiones de enseñanza pública, suplen con su ilustración y con su buen criterio esta deficiencia, no en todas se hallan ciudadanos bastante patriotas e ilustrados para confiarles la decisión de la mayor parte de los asuntos concernientes a la educación pública, ni todos tienen la misma buena voluntad para distraer sus atenciones ocupando su tiempo en favor de la cultura nacional. Además, esto da lugar a que diversas tendencias se encarrilen en un ramo cuya unidad de orientaciones ha sido reconocida generalmente como necesaria para la existencia del Estado y que se tiende a concentrar en manos de éste para darle mayor fuerza y mayor vigor y alcanzar esa unidad que se juzga como necesaria. En nuestro país, parece que se hubiera tratado de quitar al Poder Ejecutivo, la dirección de la enseñanza pública, por el hecho de que en realidad muchos de nuestros gobiernos la han descuidado de una manera inconcebible, dejándola en un estado tal de abandono que ha causado muchos daños al país. Pero no se ha logrado gran cosa con la descentralización administrativa y técnica, porque aún después de la promulgación de la ley actual, la enseñanza ha seguido tan mal atendida y aún peor que antes, notándose que cuando en el Ministerio del Ramo se hallaban personas animadas de buenas intenciones, talento y energía, se daba gran impulso a la educación, si bien tropezando a cada momento en las vallas y dificultades que le opone la ley. Esto demuestra que vale más un impulso central debido a una iniciativa inteligente que no a los esfuerzos aislados de muchas voluntades que no siempre se encuentran lo suficientemente preparadas para coadyuvar al adelanto y al progreso de la instrucción pública, y que muchas ocasiones yerran sin saberlo y acaso con la mejor buena fé. Los directores de estudios como ya hemos dicho son respecto a los Consejos Escolares Provinciales, lo que el Ministro de Instrucción Pública es al Consejo Superior; es decir, el ejecutor de sus órdenes y resoluciones con escasas atribuciones personales. Por regla general son personajes más bien administrativos, literatos, periodistas o abogados que han tomado afición a las cuestiones de enseñanza, pero con diverso criterio cada cual y en muchas ocasiones careciendo absolutamente de él. No opino que esta clase de autoridades debieran ser verdaderos profesionales de la enseñanza, porque sería bien difícil hallar en el estado actual de nuestra cultura, cierto número de profesores de primera enseñanza, en condiciones para desempeñar este cargo. Antes bien, y aunque parezca paradójico, generalmente los profesores de instrucción primaria, son los que más alejados están de las cuestiones de la pedagogía moderna.

Quizás en lo futuro podrían tenerse profesionales bastante aptos para dirigir la enseñanza primaria de cada provincia, pero por el momento no estamos en capacidad de introducir esta reforma en la legislación escolar. Ayudan en sus funciones al Consejo Escolar y al Director de Estudios de cada Provincia, dos inspectores o visitadores con la misión de vigilar y dar cuenta del estado de la enseñanza y de su marcha, a las autoridades provinciales del ramo. El último escalón de las autoridades de la enseñanza primaria es la Junta Parroquial de Instrucción Pública con atribuciones de vigilancia sobre la conducta de los maestros y la asistencia de los alumnos, así como la marcha del régimen escolar. Y no diré más sobre la autoridad de tales instituciones, sino que ha habido parroquias de la República donde a pesar de todos los esfuerzos que se han hecho no se ha podido encontrar los cuatro ciudadanos que se necesitan para formarlas, que hayan querido aceptar el cargo de vocales de ella o que tengan aptitudes suficientes para poderlo desempeñar. En cuanto a la organización de las escuelas, la ley actual dictada en 1907 y reformada durante los años 10, 11 y 12, las divide en elementales, medias y superiores, estableciendo además, por toda enseñanza rural, las escuelas de los caseríos y las escuelas prediales que se impone sostener obligatoriamente a los propietarios de fundos rústicos y que preciso es confesarlo, casi no existen, porque la mayoría de ellos no cumple con la obligación que les impone la ley. Como existe una gran confusión en lo que respecta a la reglamentación interna

de las escuelas, al número de años que debe durar la enseñanza primaria, lo mismo que respecto a los planes de estudios y a los programas, casi no se puede decir que haya uniformidad en la manera como se cumplen las disposiciones de la ley sobre la clasificación de las escuelas. Existen pocas escuelas completas en la República: aunque ya hemos dicho que la escuela graduada existe en el país desde 1876, la mayoría de ellas son incompletas comprendiendo solamente cinco grados o clases, lo que las haría clasificar como escuelas elementales y medias. Escuelas superiores no existen. Últimamente, y aunque impropriamente llamados centros escolares, se han fundado en la ciudad de Guayaquil escuelas graduadas que podían considerarse como incompletas, pues en ellas se dan enseñanza de todos los grados y hasta algunas accesorias que vienen a ser un rudimento de escuelas técnicas profesionales; podríamos considerar también como escuelas completas, los llamados colegios de señoritas en las que la enseñanza se da hasta un grado bastante elevado; pero siempre, dentro de la esfera de la enseñanza primaria, las escuelas más comunes son las de un maestro único con uno o dos auxiliares si el número de alumnos pasa de sesenta.

Pero el inconveniente principal en la organización de las escuelas no consiste en que la distribución de las materias de enseñanza no esté lo suficientemente bien graduada ni en que no haya el número de profesores necesarios para dictar todas las clases sino en los elementos accesorios que antes dijimos constituyen los principales instrumentos en la instrucción pública, es decir, los hombres, o sea los maestros, el material de enseñanza, o sean las armas, y los locales, o sea el terreno. Por regla general, el principal defecto de nuestra organización escolar consiste en abandonar en manos de corporaciones sin responsabilidad ni fiscalización, deberes y obligaciones perentorios que por desgracia no se cumplen, por lo cual es en los detalles donde principalmente flaquea la organización escolar, que abandonada a sí misma, carece de cosas tan urgentes, como son un buen reglamento general de estudios, planes y programas, y libros de texto bien escogidos. La ley actual abandona al Consejo General de Instrucción Pública la obligación de expedir estos reglamentos, pero en los años transcurridos desde que la ley fué sancionada no se han cumplido sus disposiciones. Un asunto tan esencial como la duración de la instrucción primaria ha quedado así sin fijarse de una manera definitiva y si en la mayoría de las escuelas públicas los cursos duran seis años, se debe a que el Consejo Superior de Instrucción Pública ha facultado a los consejos escolares, para dictar reglamentos y planes de estudios provisionales, habiendo adoptado la mayoría de ellos el tiempo de seis años. Pero es muy raro el alumno, sobre todo del sexo masculino, que termine su instrucción primaria, pues la mayoría sale antes de concluir la o ingresan a la secundaria sin haberla terminando, pues para este ingreso no se exige más que un examen trivial que no comprende la totalidad de las materias enseñadas en la instrucción primaria. Aunque la ley determina que exista una escuela primaria superior por lo menos en la capital de cada Provincia, resulta que esta disposición no se cumple en la mayor parte de ella.

La enseñanza de párvulos está también muy descuidada pues la ley fija como mínimo de la edad escolar la de seis años. Existen en Quito y Guayaquil, establecimientos de jardines de infantes o escuelas infantiles en las que se ha tratado de enseñar por las prácticas Froebelianas, pero en realidad muy mal observadas y que dan pocos o escasos resultados. La enseñanza rural se halla reducida a la enseñanza predial, o sea a las escuelas que la ley manda crear a los propietarios de predios o fundos rústicos, disposición que las más de las veces queda incumplida y a las que el Estado sostiene en los caseríos rurales para que la mayoría de las ocasiones se reduzcan a escuelas del sexo masculino, quedando las niñas sin ninguna clase de educación ni aún la más rudimentaria.

La misma confusión que hay en materia de reglamentos y planes de estudios, existe en lo que se refiere a horarios, los que en la mayor parte de las ocasiones son muy mal estudiados y en los que no se toman en cuenta para nada la fisiología del alumno, haciendo igual número de horas de clase tanto a los pequeños como a los

mayores. Como la enseñanza no es oral sino casi toda se da ateniéndose a las preguntas de los libros de texto que se hacen aprender de memoria a los alumnos, los maestros no pueden pasarse sin ellos. Es verdad que no habiendo programas de estudios que sirvan de guía y de norma a los profesores para saber la extensión que deben dar a sus enseñanzas en cada año, se atienen en su mayoría a un libro de texto que dividen en tantas partes cuales son los años de estudios. Muchísimas omisiones y faltas de cumplimiento a la ley podría seguir detallando; pero lo haré en el curso de los siguientes capítulos limitándome para terminar esta ojeada general del estado de nuestra educación, a señalar uno de sus defectos más capitales. A pesar de las disposiciones de la ley, el Consejo Superior de Instrucción Pública no es una corporación de iniciativas sino más bien un cuerpo consultivo y deliberativo y es el Ministro de Instrucción Pública quien lo impulsa y dirige de manera que según sean las iniciativas del ministro, será la labor del consejo superior; ahora bien, el Ministro de Instrucción Pública es un personaje que está sujeto a los vaivenes de la política y que se cambia con frecuencia. Resulta de ésto, que cada nuevo ministro lleva una nueva orientación, una nueva tendencia, y por consiguiente la enseñanza pública no puede seguir constantemente por una vía hacia el progreso persistiendo sólo en la rutina pues que las reformas que se le introduzcan no dan resultado, debido a que los encargados de ponerlas en práctica no bien han llegado a comprender su espíritu, cuando se encuentran con una nueva reforma y un nuevo reformador. Marchando así en medio de contradictorias tendencias no siempre bien comprendidas, no es extraño que no exista una buena organización en nuestro país, sobre todo, cuando en ocasiones un ministro deshace la obra de su predecesor, o por lo menos, la deja sin continuar.

CAPÍTULO TERCERO.—EL PERSONAL DOCENTE.

Dije ya antes, continuando el símil de un célebre escritor que si en la guerra los hombres eran uno de los principales elementos, los maestros constituyen ese elemento en la enseñanza, porque son ellos los factores encargados de llevar a cabo las operaciones necesarias en la campaña contra la ignorancia, y así como un ejército mientras más instruido, más bélico y más bien preparado se encuentre para la guerra, ésta se hace con los mejores resultados; así mientras más educados para ejercer su misión son los maestros de escuela, mejor será la manera y forma en que lleven a cabo su tarea, y mayores y más positivos los beneficios que alcancen los alumnos que se confían a su dirección.

En un ejército ha de tenerse muy en cuenta la forma en que se hace el reclutamiento y lo mismo, puede decirse, del profesorado. El reclutamiento del magisterio ecuatoriano es de lo más desigual. Las escuelas normales sólo existen en el Ecuador, desde hace 12 años: por desgracia su dirección fué confiada desde su comienzo no a verdaderos profesores normalistas, sino a extranjeros que por una u otra causa dieron a los establecimientos confiados a su dirección, muy mala fama y no produjeron los resultados que de ellos se esperaba. Mal situados, en locales inadecuados para su objeto, careciendo de comodidades, de mobiliario apropiado y de todos los medios necesarios para dar a los alumnos una buena enseñanza, las escuelas normales como casi todas las escuelas de la República, no han sido sino un simulacro de lo que debían ser en realidad. Se nota la misma falta de plan de estudios, de programas, de horarios y de reglamentación interna que en las demás escuelas públicas, además de muchas otras deficiencias que sería largo enumerar, el caso es, que de esos establecimientos apenas ha salido un centenar escaso de profesores normalistas en el tiempo que tienen de funcionamiento. Nada quiero decir de la suficiencia y de la preparación profesional de los alumnos de las escuelas normales, pues es posible que entre ellas existan muchos jóvenes que, debido a sus dotes naturales hayan alcanzado a vislumbrar muchas de las características de la enseñanza moderna; pero por confesión hecha en recientes documentos oficiales, se puede asegurar que por regla general la educación de los profesores normalistas dista mucho de ser perfecta.

Careciendo de escuelas normales, para suplirlas, la ley autoriza a los consejos escolares, a expedir un diploma a todo individuo de cualquier sexo, que presente un examen de las materias enseñadas en la instrucción primaria, obteniéndose así, el título de profesor de tercera clase y después de cinco años de ejercicio y de otro examen análogo, en el que además se exigen nociones de pedagogía, se obtiene el título de profesor de segunda clase. Las profesoras del sexo femenino, generalmente señoritas que han terminado su instrucción primaria, después de uno o dos años de preparación con algún profesor particular, rinden este examen; pero los del sexo masculino es muy raro que tal hagan, siendo muchísimo más escasos los profesores titulados, mientras el número de profesoras es mucho mayor que el de las plazas que podrían ocupar en las escuelas públicas. Así las escuelas están muchas veces confiadas a personas con alguna instrucción, que se han dedicado a la enseñanza como un medio de vida, no por cierto muy cómodo ni bien retribuido; pero a lo menos, en armonía con sus gastos y necesidades; no se crea tampoco que los exámenes para profesor de instrucción primaria son muy rigurosos; y más de una vez el ministerio ha tenido que intervenir para evitar que se dieran títulos de profesores en ocasiones de una manera poco conforme con la ley y uno de los consejos escolares, se ha visto obligado a suspender la recepción de exámenes de profesoras a causa del gran número de candidatos que tendía a aumentar el de las maestras tituladas que no tienen ocupación. Como la ley concede el título de profesor de primera clase a los bachilleres en filosofía, algunos de éstos se han dedicado a la enseñanza y forman núcleo escogido, a lo menos, por la superioridad de sus conocimientos. Sólo alabanzas deberíamos tener en justicia para el profesorado ecuatoriano, por lo que hace al carácter general que lo distingue. Las excepciones, que es posible que las haya, son muy escasas. La mayor parte de los profesores son sobrios hasta el ascetismo, humildes, resignados, pacientes y sufridos; de una abnegación a prueba de todas las extravagancias oficiales; de conducta honorable y sin tacha en su vida particular; buenos ciudadanos, amantes de su patria y cumplidores de sus deberes. Pero con todas estas virtudes, muy valiosas y apreciables, el profesorado deja mucho que desear por su falta de preparación, por su alejamiento de las cuestiones pedagógicas modernas, por su falta de energía para iniciar una campaña que marque orientaciones y tendencias a la enseñanza pública. No teniendo ninguna iniciación práctica en la pedagogía y en las ciencias accesorias, la generalidad del profesorado desconoce muchísimas cuestiones relativas a la educación y así se comprende que mientras en países más adelantados se han iniciado y discutido métodos y sistemas que después de algunos años de llevados a la práctica han caído en desuso o han sido abandonados después de algunos años, aquí esas luchas hayan pasado inadvertidas sin que nadie o casi nadie se haya interesado por ellas, por ejemplo: los trabajos manuales que tanto se preconizaron como medio educativo, aquí poco o nada han interesado y no tengo noticia que en escuela alguna se hayan implantado.

Sobresaliendo de este marasmo general, hay en la República principalmente en Guayaquil y Quito, algunas docenas de profesores que se preocupan de los problemas de la educación y tratan de mejorar la que dan en las escuelas que regentan; pero sus esfuerzos quedan aislados en medio de la inercia del ambiente que los rodea. Como en su carrera no tiene ninguna clase de estímulo, ni siquiera la seguridad del cargo que ejercen, ningún aliciente empuja al magisterio a mejorar su actual educación. El sueldo de que gozan actualmente, a más de ser irrisorio por lo escaso, es muchas veces tan mal pagado, que en los últimos años no ha sido raro que se debiera a los profesores de enseñanza primaria, sobre todo en las Provincias del interior hasta dos años de sueldo y en algunas ocasiones las escuelas de toda una Provincia, han permanecido cerradas todo un año por la falta de pago a los institutores. El tipo del maestro, de aspecto miserable, doliente y humilde que pasea por el ecenario de la Zarzuela Española, es muy frecuente en nuestras Provincias de segundo o tercer orden, y en las villas o poblaciones rurales donde la munificencia de las municipalidades y de los

propietarios ricos no aumenta con una subvención la menguada renta que les da el Estado, a cambio de vejámenes y humillaciones y de complacencias con los hijos de los caciques lugareños. Cométese un abuso a favor de esta morosidad del fisco, pues, agiotistas que en muchas ocasiones son agentes de los mismos colectores de instrucción pública, compran los recibos mensuales de los maestros con descuentos de 30 ó 40 por ciento para cobrarlos luego a la par. Se verá que la situación económica del maestro de escuela es deplorable a pesar de lo mucho que los tres últimos Ministros de Instrucción Pública han hecho por mejorarla, consiguiendo poner al día el pago de los sueldos, que ahora se hace regularmente. Pero en lo que respecta a la cuantía de la renta, la situación es la misma, porque el sueldo máximo a que puede aspirar un profesor es de \$120 como director de una escuela, necesitándose 10 años de servicio para llegar a poseer el título de profesor de primera clase que da derecho a la dirección. Los estímulos para la educación del profesorado, tales como viajes de estudio, las bibliotecas, los museos pedagógicos, no existen o están en embrión: la prensa profesional se ha reducido a la "Revista de Educación," excelente publicación dirigida por el inteligente Director de la Oficina de Fomento Escolar, don Homero Viteri Lafronte.

Pero esta misma, sólo ha circulado hasta aquí entre los maestros de la Provincia de Pichincha aunque en adelante se propone extender su circulación al resto de la República. En cuanto a periódicos extranjeros, son muy pocos los que se conocen y como las suscripciones a revistas de esta índole cuestan caro, no es posible pensar en que los profesores las paguen de su escaso peculio y serían las bibliotecas escolares donde debería haber un cierto número de ellos con el objeto de que por este medio tan eficaz de difusión de ideas, se mantuvieran los maestros al corriente del movimiento pedagógico moderno. Por desgracia, publíquese poco sobre esta materia, en idioma español y así se hace también necesaria la difusión del conocimiento de los idiomas extranjeros entre los profesores con el objeto de facilitarles esta labor de estudio y educación progresiva. Mientras posean algunos de éstos, principalmente el francés, pero siempre constituyen una minoría, lo que urge es dar homogeneidad al magisterio.

Privados así de medios de mejoramiento social y económico, abrumados por un ambiente hostil e indiferente, sin estímulo ni aliciente de ninguna clase; sin vida intelectual, aislados de la corriente moderna, los maestros de escuelas ecuatorianas se sienten deprimidos y como consecuencia de ese estado de abatimiento, no hay en ellos el espíritu de contentamiento interior tan necesario en toda profesión. Es pues preciso, tratar a todo trance, de levantar su nivel moral, mejorando la condición de los actuales, poniendo a su alcance medios que les permitan instruirse e interesarse en las cuestiones nuevas y preparar mejor las nuevas generaciones de educadores con el objeto de reparar en el futuro, las faltas cometidas hasta hoy por causa de la imprevisión y de la negligencia en el punto de la educación pública y a los encargados de darla. Pero sobre todo, es necesario dar más estabilidad a los cargos y establecer el ascenso en la carrera como medio de estímulo y mejorar la situación económica, señalándoles una renta que les permita una vida cómoda aunque modesta a más de otras mayores que en capítulos posteriores tendré ocasión de señalar.

Se debe estar perfectamente convencido de que es inútil intentar cualquier reforma en la enseñanza, mientras el magisterio no se haya modernizado de modo que pueda comprender todo el alcance e importancia de ella, y que esté en disposición de poner en práctica los medios para conseguirla. Y como la preparación del personal es la que más tiempo demora, se necesita comenzar por allí para llegar a tiempo a un buen resultado.

CAPÍTULO CUARTO.—LOS LOCALES DE LAS ESCUELAS.

Es necesario confesar que el terreno donde se forman los soldados de la enseñanza no puede ser más desfavorable para ellos. Es bien punible y casi injustificable que tanto los Gobiernos como las municipalidades hayan descuidado hasta tal extremo la adquisición de locales apropiados para la enseñanza. En la ciudad de Guayaquil,

existían hasta hace algunos años, un local de propiedad municipal para escuela de niñas y otro de propiedad fiscal para niños, los que fueron destruídos por un incendio sin que se pensara en reconstruirlos, antes bien, los solares que ocupaban fueron vendidos o cedidos a personas particulares y a una sociedad literaria. A causa de los grandes incendios que han destruido en los últimos años la ciudad de Guayaquil, la Municipalidad ha sido dueña de muchas áreas de terreno y maravilla que nunca se haya pensado en destinar un solo metro cuadrado a la construcción de locales para escuelas. En Quito posee el Estado algunos viejos caserones en los que funcionan algunos planteles para niños y niñas; en las demás ciudades de la República, excepción hecha de algunas cabeceras de Cantón que poseen locales de propiedad municipal y en las de alguna contada parroquia, en las que la generosidad de algún propietario rico, ha dado una modesta casa para ese fin, las escuelas están instaladas en casas sin ninguna comodidad ni adecuación especial para su objeto. Además, se tiene la perniciosa costumbre, que hoy se trata de desterrar, de que los profesores vivan en los mismos locales que ocupan; y sucede frecuentemente que dichos profesores, reservan para sí y para sus familias, la mayor parte de la casa, la cual estando edificada para habitación particular, resulta estrecha e incómoda para ambos objetos; pero mucho más, para el principal a que se la destina. Nada quiero decir acerca de los graves inconvenientes que presenta la convivencia de las familias de los maestros con los alumnos, en lo que se relaciona a la moral y a la disciplina de las escuelas. Por graves faltas contra ellas se ha prohibido que las profesoras casadas, puedan vivir en el mismo local de la escuela.

De todas maneras y pasando por alto este asunto, es preciso saber que una escuela con 100 niños de asistencia diaria, está instalada en una o dos salas pequeñas, mientras el resto de la casa, se haya ocupada por la familia del profesor o profesora. No hay que decir pues, con estos antecedentes, que la luz es completamente inadecuada y que aún falta en muchas ocasiones, que el agua es escasa y que en muchas ciudades de la República se carece de canalización domiciliaria y se la mantiene en recipientes mal cuidados y descubiertos y se hace uso para beberla de un vaso común, lo que facilita la transmisión de las enfermedades. En cuanto a los retretes, faltan en muchas escuelas, y en las ciudades y villas que carecen de canalización no los hay de ninguna clase; los lavabos son así mismo desconocidos, y en baños no hay que pensar, pues si existen en algún local de escuela, están destinados al uso particular del maestro y de su familia. La higiene de las habitaciones destinadas a salas de clases y de estudio, es casi nula, sobre todo, en las ciudades de la sierra donde el suelo y las paredes de ladrillo sin revestimiento de ninguna clase, producen abundante polvo, que sofoca a los niños y llega a producirles enfermedades y a difundir entre ellos el contagio de muchas otras.

En los lugares fríos, no se usa ninguna clase de calefacción y en aquellas salas húmedas, sombrías y oscuras, los niños permanecen tiritando mientras que en los lugares cálidos se amodoran bajo los ardores del sofocante calor tropical. Y si de las ciudades pasamos a las villas y a las aldeas, la situación empeora porque, instaladas las escuelas en viejos caserones o en cabafías estrechas, mezquinas y malsanas, ninguna comodidad, ninguna decencia cabe pedirles, puesto que toda la construcción es por regla general, misérrima e inadecuada para el fin a que se la destina. Como antes dijimos, no se ha pensado sino durante el último año, en un plan de edificación escolar para toda la República. Algunas municipalidades aisladamente han hecho edificar o, adquirido modestos edificios, las más de las veces inadecuados para que sirvan de locales para las escuelas. Sólo al último Congreso se ha presentado un proyecto creando un impuesto sobre la propiedad territorial para este objeto, el cual no fué aprobado. Se ha destinado así mismo una suma, escasa de la renta que produzca el estanco del aguardiente aunque ignoramos hasta el momento de escribir estas líneas, si dicha ley será puesta en práctica y en la Provincia del Guayas se ha destinado la mitad del impuesto que se pagaba para edificación del colegio de segunda enseñanza. Se inicia pues un movimiento de reacción en favor de los edificios escolares:

la municipalidad de Quito, ha convocado a licitación, para la presentación de planos de los futuros edificios que se proponen construir y el Gobierno ha anunciado así mismo, su intención de elevar dos edificios para escuelas en la Capital de la República. Pero todos estos esfuerzos, muy dignos de encomio, no deben quedar aislados y lo que importa es dictar una ley de edificación escolar para toda la República, señalando las rentas necesarias para este objeto, y autorizando al Ejecutivo para sustituir esta renta con la que producen las unidades de aduana afectadas por la instrucción pública, en el caso de que se pudiera contratar un empréstito para que la edificación escolar fuera llevada a cabo más rápidamente.

La ley que actualmente rige vota muchas rentas cuya recaudación sería difícil, por no decir imposible, y los fondos actualmente señalados, pueden ser calificados como problemáticos e ilusorios con excepción de un impuesto de 5 por ciento sobre las herencias, el cual no se sabe aún cuánto producirá. Así pues, con excepción de la Provincia del Guayas, en la que se ha destinado un fondo no muy abundante, pero de recaudación efectiva, las demás están aún pendientes de los resultados que dé el Decreto del último Congreso, creando fondos para la edificación escolar y de lo que produzca el estanco del aguardiente, de cuyo rendimiento se dedica una buena cantidad para este objeto.

CAPITULO QUINTO.—MATERIAL DE ENSEÑANZA.

En la segunda parte de este trabajo, hablaremos extensamente acerca de lo que a nuestro modo de entender, deben ser los futuros edificios escolares. Y mientras tanto, vamos a ocuparnos del tercer elemento o sea de las armas, que en este caso tenemos que confesar son bien primitivas y aun escasas en número. No hay más que revisar los informes de los directores de estudios de las Provincias para conocer hasta que punto la miseria de los establecimientos de instrucción pública puede haber llegado. Escuelas hay, que por todo material, poseen un mapa y un pizarrón. Los niños se sientan muchas veces en el suelo y en las escuelas rurales es raro que otro sea el asiento de los educandos.

En la mayoría de las escuelas públicas, priva aún el largo bancón de madera para seis u ocho plazas, con duro e incómodo asiento, sin respaldo y de un solo tamaño, cualquiera que sea la talla de los niños que en ellos se sientan; no puede darse mayor infamia que los tales asientos por que parecen ser hechos a propósito para imprimir deformaciones a sus débiles cuerpos, obligándolos a permanecer encorvados sobre el pupitre durante las largas horas de clases, en las cuales el alumno fastidiado por la posición, abrumado por la monotonía de sus tareas, fatigado por el clima sofocante de la costa, se amodorra soñoliento sin poner atención en las cansadas explicaciones del maestro.

En algunos establecimientos docentes, ni siquiera existe esta clase de asientos sino simples bancos sin ningún respaldo y mesas cuya altura no se ha calculado; pues puede decirse, que la higiene escolar nunca ha presidido en nuestro país la fabricación de mobiliario que siempre se ha hecho sin arreglo a plan de ninguna clase y con ánimo más bien, de favorecer al constructor que dar cómodo asiento a los alumnos. Casi puede añadirse, que la mayoría de las reglas que la higiene da sobre este asunto, son desconocidas por los directores de estudio que han procedido, más bien por ignorancia de ellas, de una manera tan contraria y perjudicial a la salud de los escolares.

En estos últimos tiempos, la oficina central de Fomento de Instrucción Pública, que es la encargada, desde el año último, de adquirir el material para las escuelas, ha comenzado a dotarlas de asientos unipersonales y bipersonales pero todavía en muy reducido número.

En cuanto a las escuelas rurales, sobre todo en los lugares de escasa importancia, ya hemos dicho que el material es casi nulo y que a veces los alumnos tienen que sentarse en el suelo.

Las pizarras, son los muebles escolares más faltos de higiene y de comodidad para los alumnos: cuando éstos tienen que ir a ella para hacer alguna demostración, sufren un verdadero martirio; como su altura es fija y su tamaño uniforme, los niños pequeños no alcanzan a escribir en ella, sino con mucha dificultad y se cubren de polvo de yeso, como si estuvieran en una tahona.

Su superficie es brillante y lustrosa y como la luz de las salas está generalmente mal orientada, refleja en ellas y vuelve difícil la lectura de lo que se escribe.

En cuanto a mapas y globos geográficos y más accesorios para la enseñanza de la geografía, serán muy escasos los planteles que posean una colección completa de ellos. La mayoría apenas posee el mapa del Ecuador y aún éste como los demás, son inexactos.

No hablo de todos los demás útiles escolares, tales como láminas demostrativas, lecciones de cosas, museos, etc., porque son completamente desconocidos aún en las mejores escuelas del Ecuador. Aún en lo que se refiere a figuras geométricas se anda muy escaso de ellas por más que sería fácil procurárselas; pero por regla general, la geometría como las demás materias es enseñada de una manera teórica.

Si existiera una verdadera inspección higiénica escolar, se podría saber fácilmente hasta qué punto causa daño en nuestra niñez, tantos y tan graves defectos del mobiliario escolar, sin contar con el que causan los libros, de los cuales no hemos hablado a propósito hasta ahora por que deseamos hacerlo con más detenimiento. El ideal de todo país que se preocupa de su educación consiste en poseer libros de texto escritos por nacionales a fin de estimular su producción científica y literaria y de fomentar las ideas de Patria y nacionalidad en los niños, obteniéndose así no solo que los libros se adapten al carácter y a las costumbres nacionales sino también que aún los modismos y maneras de hablar de cada nación se transparenten con su dialéctica.

Con tal objeto se han establecido premios y concursos para estimular a los escritores nacionales. Poco o nada se ha hecho en nuestro país en tal sentido y si alguna vez se ha abierto un concurso para texto nacionales, esto ha sido con el objeto de proveer algún libro de higiene de los cuales, a pesar de su falta de observancia en todo el país, hay ya muchos escritos.

La mayoría de los libros que sirven de texto en las escuelas son de autores extranjeros; pero lo que parece más inaudito es que actualmente se carezca de un texto de historia y geografía patrias: porque desechados los que existían oficialmente declarados como tales, no se ha cuidado de proveer su reemplazo aunque se hayan escrito otros cuya adopción no se ha recomendado aún por el Consejo Superior de Instrucción Pública. Esta anarquía ha ido tan lejos que puede decirse que no ha habido dos escuelas que usen los mismos libros de texto.

Si es importante esta cuestión entre nosotros es porque en las escuelas públicas no se enseña más que lo que rezan los libros de texto y a veces mucho menos gracias a la supresión que en ellos hacen los profesores en su deseo de acortar y hacer más fáciles los cursos. Así, un mal libro de texto es raramente compensado por las explicaciones del maestro pues la mayoría de éstos gustan poco de darlas.

Con todo, en estos últimos tiempos la mayor parte de los Consejos Escolares han tratado de fijar, si no de un modo definitivo, por lo menos sí más estable, la lista de los textos que deben servir en las escuelas de sus respectivas provincias tendiendo así a unificarse esta importante cuestión aunque se esta aún bien lejos de conseguirlo.

CAPÍTULO SEXTO.—MÉTODOS Y SISTEMAS.

Estamos perfectamente ciertos que, salvo escasas excepciones, si se pregunta a cualquier profesor de Instrucción Primaria de la República cuál es su sistema pedagógico y qué método sigue en la enseñanza, seguramente no sabrá qué responder a punto fijo o dirá que sigue un método que se ha arreglado para su uso personal conforme a su propia experiencia.

Esto quiere decir, y confirma lo que anteriormente dije, que el profesorado nacional vive en la rutina y en el empirismo, pues no habiendo salido de ninguna escuela especial ni habiendo tenido suficiente preparación profesional y técnica conoce poco o nada de los métodos o sistemas vigentes e ignora por completo su aplicación en la práctica de la enseñanza.

Hemos dicho ya que no siguiendo el movimiento profesional éste se halla ignorado y se ha alejado de las cuestiones del día que por otra parte no parecen solicitar su atención.

Un alto empleado en una oficina de Instrucción Pública nos ha suministrado al respecto el siguiente dato muy significativo: existe en la Provincia del Guayas una pequeña, pero escogida Biblioteca Pedagógica, que tiene el carácter de circulante; pues bien, desde su apertura, sólo dos o tres maestros han consultado alguno que otro libro de esa biblioteca.

Esto no obstante es muy común oír en boca de los maestros las palabras pedagogía moderna, método objetivo, sistema ciclo, concéntrico y otras por el estilo, aunque apenas lleguen a vislumbrar su valor y a conocer su significado; pues ésto no es más que una manera de ocultar lo que no se sabe con palabras de relumbrón para alucinar a los que les escuchan. Ninguno de ellos ha visto ni siquiera se imagina cómo funciona una escuela moderna y mucho menos llega a penetrar el espíritu de las nuevas enseñanzas. Para ellos la instrucción es función meramente sugestiva y tarea penosa, difícil y poco agradable, al fin de la cual sólo se vislumbra la jubilación con un sueldo mezquino para pasar los años de la vejez.

Siendo monótona su vida es también monótona la enseñanza que dan, si un maestro enseña por ejemplo aritmética su afán se cifra en que sus alumnos conozcan de memoria las reglas y hagan de corrido las operaciones sin que se les ocurra aprovechar esta enseñanza para hacerles ver su fin práctico y utilitario ni despertar en los niños el espíritu de observación y el discernimiento y raciocinio lógicos, haciendo de esta ciencia una de las más esencialmente naturales, como decía Descartes, un aprendizaje monótono y pesado.

Lo mismo sucede con la gramática de la cual los alumnos conocen sus reglas perfectamente y que sin embargo hablan y escriben el castellano muy mal, pues no se han corregido los barbarismos que se usan en el lenguaje habitual, sobre todo en la clase del pueblo.

Puede decirse en realidad que ningún sistema se sigue en las escuelas: toda la enseñanza teórica se reduce a la vieja rutina de señalar lecciones en los viejos libros de texto, que luego los alumnos aprenderán y recitarán de memoria y en designarles temas, o como se dice en lenguaje escolar, "deberes," que no son otra cosa que algunas frases que se hace escribir a los alumnos en un cuaderno o algunas operaciones de aritmética que se les hace resolver.

El sistema de lecciones orales, que es ya un adelanto, pues desarrolla en el profesor la dialéctica y lo obliga a buscar nuevos conocimientos fuera de los libros del texto, se ha introducido últimamente en algunas escuelas recién instaladas; pero ignoramos qué resultado haya dado sobre todo en vista de la poca preparación que profesores y profesoras tienen para hablar en público por la falta de costumbre de hacerlo. A este efecto se me asegura, que, habiendo el Director de Estudios ordenado que los directores de escuelas dieran una conferencia el día anterior al que se celebra el aniversario de la Independencia, sobre este tema, la mayoría de las conferencias, que no fueron disertaciones orales sino escritas, no fueron hechas por los designados, sino por personas extrañas, a las que habían tenido que recurrir, creo más bien que debido a su apocamiento, que a su ignorancia de la historia patria.

No puede por otra parte exigírseles a los maestros conocimiento intuitivo de métodos y sistemas que si bien ellos no se han cuidado de aprender siquiera teóricamente, les sería difícil poner en práctica sin un aprendizaje previo. Así por ejemplo, se ha introducido en las escuelas la enseñanza de las ciencias naturales que los maestros o no aprendieron, o aprendieron solamente leyendo un texto cualquiera: difícil será que

de este modo puedan dar lecciones orales sobre cosas que sólo pueden aprenderse a conocer de una manera práctica y mal se puede explicar la contextura de una hoja por ejemplo, si no se conocen sus partes componentes.

Fáltales además a los maestros instrucción y educación científicas generales y por lo tanto ignoran muchas cosas que es necesario saber en la vida práctica y que ayudan mucho en la tarea del buen educador.

Sin el auxilio de una vasta educación y de una preparación profesional suficiente, no es posible que llenen su tarea sino con la deficiencia con que lo hacen actualmente. Fuera de esto, la multitud de prejuicios que se amontonan sobre ellos, por causa de esta misma falta de educación y del medio ambiente en que ejercen les hace mirar con despego toda idea nueva que les impone un recargo de trabajo; así cuando por iniciativa de algún Director de Estudios, se trata de implantar una reforma se tropieza con la valla de la mala voluntad de los Institutores que no comprende el valor pedagógico de la reforma y sólo miran de ella el nuevo esfuerzo que tiene que hacer.

Por esto podrá verse lo difícil que será, sin un esfuerzo muy grande, hacer que el profesorado entre por la vía de la reforma estudiando, adoptando y enseñando los métodos pedagógicos modernos.

No creo que ni aun el estímulo del aumento de sueldo haga que los profesores salgan de su estancamiento: una parte de los más jóvenes y más adelantados se beneficiará con tal mejora; pero la mayoría no ganará más que el valor pecuniario de ella; pero no responderá a ese aumento con un desarrollo mayor de energía y de interés profesional. Quizás si se implantaran cursos de aplicación se lograría iniciar en muchos conocimientos nuevos y muy útiles para ellos, a los maestros de buena voluntad que quisieran mejorar la enseñanza que actualmente dan, pero cada vez que se ha intentado hacer algo en este sentido se ha tropezado con dificultades puestas por los mismos que más beneficiados saldrían con esta medida.

CAPÍTULO SÉPTIMO.—ASISTENCIA ESCOLAR—VISA ESCOLAR.

Carecemos hasta ahora a pesar de los esfuerzos hechos en diferentes ocasiones para obtenerlo, de un censo escolar, que dé suficientes garantías de exactitud. Ignoramos a punto fijo, cuál es el número total de niños que debería asistir a las escuelas y cuántos dejan de hacerlo, porque aún cuando la ley dicta providencias para que se lleve a cabo anualmente un recuento de los niños de cada localidad que han cumplido la edad escolar, las disposiciones de la ley quedan incumplidas.

En la Memoria de Instrucción Pública de 1911 hallamos consignadas las cifras siguientes:

De 1901 a 1911 el número de escuelas primarias ha subido 5.24 por ciento al año, o sea 52.36, en toda la década; el número de niños matriculados ha aumentado en 15.14 al año, o, de otro modo, 151.36 por ciento en los 10 años; y el número de profesores ha subido 13.21 anualmente, o, lo que es lo mismo, 132.13 hasta la presente fecha.

El estado actual de la instrucción primaria, da las siguientes cifras—Estadísticas generales: 1,551 escuelas; 124,113 niños matriculados; 104,153 asistentes, por término medio y 2,326 preceptores.

Ahora bien; entre las 1,551 escuelas se encuentran 596 fiscales de varones, 509 de mujeres y 92 mixtas, las que dan un total de 1,197. Las escuelas municipales de niños, son 29, las de niñas 21 y las mixtas 2, y sumadas éstas, ascienden a 52. Las particulares son en mayor número que las municipales; pues de aquella condición hay 134, para niños, 98 para niñas y 70 mixtas, en total, 302 escuelas particulares.

Las 1,197 escuelas fiscales, están servidas por 1,484 maestros; las 52 municipales, por 156, y las 302 particulares por 686.

Significa esto, que a cada escuela fiscal no le corresponde sino un maestro, pues el cómputo es de 1.24; a las escuelas municipales 3 y a las particulares 2, siendo la cifra exacta para éstas 2.27.

En las escuelas fiscales se han matriculado 92,947 niños; en las municipales, 9,474 y en las particulares 21,672. Por tanto, a cada escuela fiscal corresponden 77.64 niños y para ellos hay un maestro; la cifra exacta es 1.24; a cada escuela municipal 182.57 niños y para éstos 3 profesores; y en las particulares 71.70 niños con 2.7 profesores.

Con estos datos a la vista no es posible ocultar que hay deficiencia en el número de preceptores, ya que ninguna escuela que pasa de cuarenta niños puede tener menos de dos maestros. Este es punto que la experiencia tiene completamente definido.

Ni se puede tampoco dejar de notar que en las escuelas fiscales, computando el conjunto de los niños matriculados en ellas con el total de sus profesores, resulta que por cada uno de éstos hay 62.83 niños; en las escuelas municipales, a cada maestro le corresponden 60.61 niños y, en las particulares 31.62.

Cierto que este cálculo, está hecho sobre el número de niños matriculados, no con relación al número de niños concurrentes; mas importa considerar el punto en ese aspecto, porque la falta de número suficiente de preceptores en las escuelas fiscales, en razón de los niños inscritos en las mismas, puede ser causa, mediata siquiera, de que la diferencia se mantenga en su punto, tratándose de las escuelas fiscales y las particulares. El total de niños asistentes a las 1,551 escuelas de la República, es 104,153 de los cuales concurren a las escuelas fiscales 76,857; a las municipales 8,127 y a las particulares 19,169.

Dedúcese de esto, que en las primeras de dichas escuelas, a cada preceptor corresponden 51.73; en las segundas 55.30 y en las últimas 27.94. En realidad pues, la diferencia entre las escuelas fiscales y las particulares no desaparece, calculando con el número de niños asistentes. Y se puede inducir que la deficiencia en el número de profesores fiscales, es una de las causas para que las escuelas particulares sean generalmente preferidas a aquellas.

A la vez importa considerar que las escuelas municipales están menos bien servidas, en este sentido, que las fiscales, no obstante las aseveraciones que a ciegas han lanzado algunos para defender la bondad de la instrucción municipal y la ingerencia que las municipalidades tienen actualmente y procuran asegurar en la instrucción primaria de nuestro pueblo.

Continuando el cálculo con el número de niños asistentes a las expresadas escuelas y los presupuestos respectivos, llegaremos al resultado de que la instrucción que se da en las fiscales es gratuita para el pueblo, y proporcionalmente menos costosa para la nación, que las otras lo son para las municipalidades y para los particulares.

Desgraciadamente, este cálculo es imposible, porque, ni los razonamientos, ni las exigencias, ni las órdenes imperativas, han valido para que en algunos lugares se pudiera recoger el menor dato oficial sobre la estadística de las escuelas municipales y particulares. Igual cosa sucedió en el año pasado, por lo que fué preciso recurrir muchas veces a los datos del año 1908.

Procediendo con esos mismos datos, con los que extraoficialmente ha podido obtener la Oficina de Estadística de Instrucción Pública, incorporada a este Ministerio, y con los demás puntualmente remitidos de la mayor parte de las secciones del país, tenemos que, en nuestra población civil, de 2,400,000, la población infantil, según leyes estadísticas más o menos fijas, debe ser de 600,000, y la escolar, o de niños de 5 a 14 años de edad, 480,000. Pues bien, de estos 480,000 niños que se hallan obligados a recibir instrucción, sólo 124,113 se han inscrito en las escuelas (el 25.86 por ciento de la población escolar, o sea el 5.17 por ciento de la población civil); siendo así que aquélla se calcula en un 20 por ciento de ésta. El coeficiente de inscripciones es todavía demasiado bajo; pues nos demuestra que de 480,000 niños en estado de recibir instrucción, 355,857, o sea 14.83 por ciento de la población civil o 74.14 por ciento de la población escolar se queda en estado de analfabetos. Ese 5.16 por ciento nuestro está en relación con el 20 por ciento que, para sus inscripciones escolares, fijan los Estados Unidos, Suiza, y algún otro país de Europa.

La fuerza extensiva de la instrucción primaria en el Ecuador, es 14.84 veces menor que en dichas naciones.

No diré lo mismo tratándose de los países sudamericanos; pues, con relación a ellos los datos estadísticos siguientes del Ecuador no son desconsoladores sino, al contrario, muy honrosos y satisfactorios para nosotros:

Países.	Ana- betos.	Por ciento de su población escolar.
Argentina.....	655,810	62.4
Uruguay.....	116,449	53.19
Chile.....	444,564	68.4
Ecuador.....	355,887	74.14
Paraguay.....	93,368	74.28
Panamá.....	71,499	85.3
Brasil.....	3,537,078	86.2
Bolivia.....	343,323	87.5
Perú.....	806,940	88.4
Venezuela.....	494,062	92.8

Según el cálculo precedente, el Ecuador ocupa el cuarto lugar entre todas las naciones sudamericanas, en cuanto a la difusión de la instrucción, y es cálculo bastante exacto, o, al menos, conforme con los que han hecho en estos últimos años los países nombrados, y sobre todo, la Argentina, el Uruguay y Chile; mas si se me preguntase sobre el lugar que nos corresponde en cuanto a la calidad de esa instrucción, confieso que me vería precisado a hacer distinciones, porque entiendo que sólo en las capitales de Provincia se han sujetado los maestros al programa general que existe, y en el cual se ha adoptado, de hecho, el sistema de estudio concéntrico, y prescrito para todas las escuelas, las materias que en el mundo moderno se reconocen como indispensables a cualquier ciudadano.

Los promedios que corresponden a cada circunscripción son los siguientes; a cada parroquia 3.72 escuelas y 297.63 niños matriculados; a cada Cantón 27.69 escuelas y 2,216.30 niños inscritos en ellas y a cada Provincia 103.4 escuelas y 8,274.2 niños asimismo matriculados.

El número de escuelas que realmente funcionan en la República se divide de este modo:

	Escuelas.	Niños.
Carchi.....	62	7,318
Imbabura.....	88	18,469
Pichincha.....	154	36,655
León.....	83	9,858
Tungurahua.....	79	28,300
Chimborazo.....	123	16,250
Bolívar.....	51	8,390
Cañar.....	30	15,142
Azuay.....	177	26,181
Loja.....	250	22,766
El Oro.....	65	4,463
Guayas.....	202	22,258
Los Ríos.....	26	3,756
Manabí.....	122	16,454
Esmeraldas.....	44	2,544
Oriente.....	14
Archipiélago Colón.....	1

Esto es:

	Escuelas.	Kilómetros cuadrados.
Carchi.....	1	68
Imbabura.....	1	75
Pichincha.....	1	104
León.....	1	89
Tungurahua.....	1	55
Chimborazo.....	1	62
Bolívar.....	1	53
Cañar.....	1	121
Azuay.....	1	54
Loja.....	1	33
El Oro.....	1	98
Guayas.....	1	105
Los Ríos.....	1	225
Manabí.....	1	167
Esmeraldas.....	1	221
Oriente.....	1	17,857
Archipiélago de Colón.....	1	7,430

Desigualdad notoria que denuncia en los actos de las autoridades de instrucción primaria, a lo menos, poca rectitud, ocasionada singularmente, por la indiferencia con que ha sido mirada la estadística; pues el número de habitantes, por cada kilómetro cuadrado, en nuestras Provincias es como sigue:

Carchi.....	21-74	Loja.....	18-03
Imbabura.....	20-10	El Oro.....	9-27
Pichincha.....	23-74	Guayas.....	7-51
León.....	31-05	Los Ríos.....	17-90
Tungurahua.....	44-86	Manabí.....	5-91
Chimborazo.....	25-05	Esmeraldas.....	1-95
Bolívar.....	36-40	Oriente.....	0-43
Cañar.....	30-30	Archipiélago de Colón.....	0-38
Azuay.....	22-01		

Las escuelas fiscales que han funcionado en dichas Provincias son 1,197, con 92,947 niños matriculados.

En los informes posteriores correspondientes a los años de 1,912 y 1,913, no se encuentran datos estadísticos de importancia y la estadística escolar que trató de levantar el último Ministro de Instrucción Pública, ha quedado incompleta y no se ha publicado.

Se comprenderá porqué nuestro país adolece de tantos y tan graves defectos si se considera que su educación no sólo es deficiente en calidad sino también en cantidad.

En cuanto a la suma que el Estado gasta en instrucción primaria es según la última memoria de Instrucción Pública de 1,223,090.

En las escuelas públicas del Ecuador, no puede ser más triste ni más monótona la vida que los estudiantes llevan; copio aquí dos cuadros que he trazado en artículos publicados en diarios y revistas sobre la vida en las escuelas urbanas y rurales. Dicen así: "Id sino a una escuela pública: si es de niñas y entráis en una de sus clases, veréis una habitación no muy limpia ni muy grande, donde el polvo se acumula en zócalos y rincones, de paredes lisas cuyo papel desgarrado en algunos sitios presenta en los letras escritos con lápiz que hay en diversos sitios, señales de la inquietud y travesura de las estudiantes. Grandes bancones de madera con asientos sin respaldo, una mesa al centro y una silla donde se sienta la profesora, y a su derecha, un pizarrón; tal cual mapa que cuelga de una pared. La luz no muy abundante ni bien repartida. Treinta o 40 cabecitas con caras morenas y ojos brillantes y alguna que otra rubia se mueven, gritan, alborotan, disputan y estudian en voz alta. Por entre los paillos que dejan entre ellas las bancas, se pasea la maestra. A veces, solicitada por alguna niña, se detiene, toma un libro que le alcanza la alumna y formula una pregunta del

texto, ayudando la memoria de la alumna con tal cual palabra que a ésta se le escapa. Deja éste para ir a otro lugar corrigiendo una disputa entre dos niñas y repitiendo sus preguntas del texto a otra, y así sucesivamente. Las lecciones orales que acaso se den desde principios de este año en los Centros Escolares serán, sin duda, una novedad: yo describo la escena, tal cual la he presenciado.

Si la escuela es de varones, el escenario no varía; el maestro, un hombre las más de las veces de aspecto triste y rostro melancólico, preside así mismo 30 o 40 muchachos, en quienes si la inquietud es mayor, pesa más severa la disciplina y se mantienen inmóviles con la vista fija en un libro que aparentan mirar y no leen. Y nada de patios de recreo y nada de comodidades higiénicas y nada de enseñanzas prácticas, ni de lecciones gráficas, ni de cosas que hablen a su imaginación de niños, enseñándoles a formar su criterio, educando el corazón y el carácter. La patria: ¿significa algo ésto para nuestros escolares? Preguntádselo a alguno de ellos. ¿Las niñas: saben para qué se las educa? ¿saben que serán mañana madres de familia y conocen las obligaciones que como tales tendrán que cumplir?

En nuestras escuelas se enseña gramática, aritmética, geografía, historia, tal como está escrita en los libros, pero no se educa: se dejan intactos los sentimientos, se deja formar el carácter por sí mismo, se dejan, sin tocar las pasiones y los prejuicios que las influencias ancestrales de muchas generaciones y el ambiente local, han formado en el corazón de los niños.

Y en otra parte he escrito lo siguiente refiriéndome a las escuelas rurales: cuando yo he recorrido los pueblos de nuestra costa, durante la estación veraniega, me he sorprendido al llegar a algún caserío adormecido en medio de la quietud de la llanura, calcinada por el ardiente sol tropical, al oír un susurro como de colmena, mezcla de voces infantiles que salmodiaban en tono monótono y cadencioso.

El ruido salía de una choza, ni más limpia ni menos mísera que las demás. Me he detenido y he entrado en ella. Sentados en el suelo o en bancos de madera dos o tres docenas de chiquillos se apiñaban, encorvándose sobre libros de lectura o sobre pizarras que sostenían en sus rodillas. Un hombre, tan rudo como el rústico y agreste paisaje que le rodeaba, enseñaba a leer y escribir a aquella pilletería desarrapada, de tez morena y ojos brillantes. Esta es la escuela clásica de nuestros caseríos; alguna, más bien instalada, cuelga de sus paredes uno o dos mapas, o, adorna uno de los ángulos de la pobre estancia con un pizarrón desvencijado. Al menos los niños del sexo masculino tienen ese rudimento de escuela donde aprenden el "abecé" y el "2 y 2 son 4." Pero las mujercitas más dedicadas a los quehaceres domésticos, al lado de sus madres, están por completo desprovistas de todo medio de educación. Ninguna lección moral ni técnica, nada de lo que arma y prepara para la vida llega hasta ellas, y en una ignorancia verdaderamente primitiva, crecen y se desarrollan ignorándolo todo, más, conservando las tendencias, no combatidas de la herencia, del medio y de la raza. Sin campo de experimentación y de juegos, sin aire ni luz en las clases, sin medios para que se las haga más fácil, más objetiva y por consiguiente más comprensible la enseñanza; sin costumbres pedagógicas que procuren expandir y alegrar el espíritu de los niños, sujetos a una disciplina rígida y floja al mismo tiempo, los pobres estudiantes ecuatorianos crecen así, adquiriendo la idea de que el deber es un yugo pesado del cual procuran librarse a cada paso. Quizá por esto nuestros ciudadanos tienen tan en poco el cumplimiento de las leyes.

Últimamente se ha establecido en las escuelas la enseñanza de la gimnasia; pero para efectuarla, los niños debían atravesar casi toda la ciudad bajo un sol de plomo y a trueque de sufrir una insolación llegan desfallecidos y jadeantes al lugar designado y ejecutan los movimientos de la gimnasia sueca en las horas más fuertes del día. En algunas escuelas privadas se ha establecido el "boyscoutismo"; pero en las escuelas públicas las autoridades han mirado con indiferencia esta admirable escuela de energía, de vigor físico y de fuerza moral, que el General Baden Powell, ha ideado para dotar a la humanidad de hombres capaces de arrostrar todos los peligros con aplomo y serenidad.

No quiero insistir sobre este punto, pues con lo que he dicho se comprenderá lo triste y monótona que debe ser la vida de los pobres estudiantes de nuestras escuelas y como éstas, a trueque de un poco de instrucción atrofian el cuerpo y los sentimientos de los infelices muchachos.

CAPÍTULO OCTAVO.—REFORMA ADMINISTRATIVA.

Conocidos ya por la exposición que se ha hecho en los capítulos precedentes los principales errores y defectos de nuestra enseñanza primaria, pasaremos a señalar los medios que creemos más adecuados para remediarlos y para levantar el nivel de ella hasta el punto que el estado actual de la civilización lo requiere.

Según el orden que seguimos anteriormente en nuestra exposición dimos la preferencia y pusimos en primer lugar el escalafón administrativo que la ley señala para las autoridades del ramo de Instrucción Pública. Ya hemos visto los perjuicios que ocasiona el haber acumulado un exceso de autoridad en manos del Consejo Superior de Instrucción Pública, institución que por su morosidad y parsimonia, estanca más bien que tiende a desarrollar la marcha de la enseñanza pública.

La tendencia actual de las naciones es a concentrar en manos del Estado la enseñanza primaria, como función del Estado mismo y como condición indispensable para su conservación y sostenimiento. Razones de orden político y de carácter social, derivadas del estado actual de nuestra Constitución, como Estado libre e independiente, nos impulsan a aceptar esta teoría y por tanto nos declaramos partidarios de la enseñanza obligatoria por parte del Estado. Nuestra constitución consigna este mismo principio y nuestra actual ley de Instrucción Pública contiene la misma prescripción, pero es necesario que las autoridades tomen todas las precauciones necesarias y pongan el mayor empeño posible para que la ley sea cumplida en la mayor extensión posible. Para ello, es conveniente, una impulsión enérgica, dada por un organismo dirigente central.

Según esto, el Estado debe delegar sus facultades en un funcionario, que, por tratarse de un ramo tan importante y en el que toda labor exige para que dé sus frutos una perseverancia y adaptación especiales, que no serían fáciles de conseguir, debería estar libre de las influencias de la política y fuera de los cambios a que tan frecuentemente están sujetos los Ministros. Estas consideraciones han sugerido en otros países de vida política análoga a la nuestra, la idea de la creación de una Dirección General de Instrucción Pública, en la cual el Director General sea un verdadero técnico, un profesional de la enseñanza que la guiará y orientará como un piloto guía y orienta una nave.

Difícil sería en verdad hallar entre nosotros profesionales con la capacidad suficiente para tal cargo; pero entre los intelectuales del país hay muchos que han dedicado al problema de la enseñanza largas horas de estudio y entre ellos podría escogerse la persona que mejor conviniere para el desempeño de tan importante puesto, tanto más, cuanto que él no requiere el conocimiento íntimo y la práctica de la técnica metodológica, sino el de las ideas generales y de los detalles administrativos de la marcha de la enseñanza en los países más adelantados.

Como cuerpo consultivo podría tener a su lado algunos funcionarios de los que dirigen las principales escuelas de las Capital de la República.

El ministro, sin perder su autoridad y su iniciativa personal, tendrá en este funcionario un verdadero consultor técnico, que a su vez no carecería de autoridad y obraría en nombre del ministro en cierto número de casos. Esto tendría la ventaja de no coartar la libertad de acción de ambos funcionarios.

A la cabeza de cada instrucción en cada Provincia se hallaría un director provincial ayudado por el número de inspectores suficiente para vigilar la marcha de la instrucción en los varios cantones de cada Provincia y con atribuciones análogas a las que le da la ley actual sin las cortapisas de los consejos escolares.

Centralizada la enseñanza en manos del Estado, las municipalidades contribuirán a ella con la renta que la ley les señala, quedando en libertad de establecer escuelas sujetándose a la ley y a los reglamentos, con fondos especiales fuera de la cuota correspondiente.

La enseñanza municipal por más que ella tenga defensores, no ha dado buenos resultados, con escasas excepciones de las ciudades de importancia, ni en nuestro país, ni en otros donde el Estado se ha apresurado a concentrarla. Acaso en los países de gran autonomía y descentralización política y administrativa, como en los Estados Unidos, ella puede ser provechosa, pues da lugar al desarrollo de las iniciativas individuales; pero por lo que hace al nuestro, los resultados que hasta aquí se han obtenido no nos parecen favorables.

En cuanto a la educación particular o privada, algunos escritores ponen por ejemplo a Colombia y a Chile, que han opinado en el sentido de darle gran apoyo e impulsarla por medio de subvenciones concedidas por el fisco y las municipalidades.

En las citadas naciones ha habido razones precisamente contrarias a las que nosotros tenemos, para no opinar del mismo modo. En el primero de los países la educación pública se halla entregada en manos de comunidades religiosas y los elementos liberales, tratando de hacer contrapeso a la enseñanza oficial, han obtenido ventajas para desarrollar la enseñanza privada en oposición a la que da el Estado. En cuanto a Chile, donde las colonias extranjeras son muy numerosas, se han permitido estas escuelas y colegios donde se dictan clases en el idioma de los alumnos y estos colegios extranjeros han tomado un gran desarrollo, fomentando la enseñanza de los idiomas, aún entre los nativos del país. Pero entre nosotros, ni existen colonias extranjeras numerosas, ni la educación se halla en manos de las órdenes religiosas; al contrario, serían éstas las que se aprovecharían de la libertad y de las ventajas concedidas haciendo formidable competencia a la enseñanza oficial, a la cual hoy mismo pretenden superar, si no por el número y cantidad de establecimientos, por la calidad de éstos.

La enseñanza libre no debe ser hasta tal punto que se halle en contraposición a las orientaciones pedagógicas del país, pues ésto es contrario a la doctrina establecida, de que la enseñanza de los ciudadanos es una función del Estado. Por ésto y por razones de orden social y político, los establecimientos de enseñanza particular deberían ser vigilados una vez que el Estado hubiera llagado a poner sus escuelas a un grado de adelanto y de eficiencia convenientes.

En los países donde la nación no puede sostener sus establecimientos de enseñanza, ni tratar de mejorar los que existan, es justo que se proteja la enseñanza particular; pero en el estado actual de nuestra cultura creo mucho más conveniente impulsar la enseñanza oficial.

En los Cantones y parroquias los Inspectores escolares llenarían las funciones actuales de las Juntas Parroquiales, que como ya dijimos antes, son difíciles de reunir en las pequeñas poblaciones, sobre todo en las provincias serraniegas.

Facilitado así el engranaje de las ruedas administrativas sería menester darles impulso y reglamentar su funcionamiento conforme a un plan determinado, misión que correspondería a la Dirección General de Instrucción Pública, la que dictaría los reglamentos, planes de estudio, etc., etc., previa consulta al Consejo de Instrucción Pública y con la aprobación del Ministerio respectivo.

Por lo que hace al espíritu de los reglamentos, en los capítulos siguientes trataré de exponer con la brevedad y concisión posible, las ideas generales que inspirarían dichos reglamentos. Se notará que en la organización general administrativa, lo mismo que en muchos otros puntos, mi modo de pensar difiere en poco del criterio en que se inspiró el último Ministro de Instrucción Pública, para presentar al Congreso sus proyectos de ley, que por desgracia no fueron aprobados. Diré que, con excepción hecha de algunas innovaciones que me parecen exóticas o prematuras, yo estoy de acuerdo con la mayor parte de las reformas intentadas por ese funcionario, las que considero necesarias y de aplicación práctica.

CAPÍTULO NOVENO.—LA REFORMA—REFORMA DEL PROFESORADO.

Resumiendo lo que en capítulos anteriores llevamos dicho acerca de nuestra enseñanza, veremos que sin recargar el cuadro ni ensombrecer los colores con que lo hemos pintado podemos declarar lisa y llanamente que el estado de nuestra instrucción es lamentable por el atraso y el abandono con que se le ha mirado, con intervalos de Gobiernos que se han preocupado por ella, para caer de nuevo en la desorganización y el olvido. Épocas ha habido en las que a los maestros de toda una Provincia no se les ha pagado sus haberes durante más de dos años y han tenido que clausurarse las escuelas por esta causa.

Pero aunque hoy el Estado se preocupa mucho más de un ramo tan importante de la administración y las rentas de Instrucción Pública no son distraídas para otros objetos, resultan sin embargo insuficientes para llenar las necesidades de la actual población escolar y mucho más para cubrir todas las que fuera necesario para educar por lo menos un número doble del de niños que actualmente se educa; dejando con todo un déficit que representaría el 40 ó 50 por ciento de la población total escolar que quedaría aún analfabeta. Y esto en cuanto a extensión, que en cuanto a calidad quedaría mucho aún por hacer.

No tenemos maestros, ni locales, ni material de enseñanza y estos tres elementos no se improvisan en poco tiempo. De propósito no he querido tratar extensamente la cuestión de rentas, destinadas a la instrucción pública porque ésta es la base en que se asienta el problema de toda reforma de la instrucción pública.

Las actuales rentas son insuficientes y sería necesario duplicarlas por lo menos para mejorar y aumentar las escuelas y sus servicios, para crear escuelas normales y mejorar la situación económica del profesorado con el objeto de atraer al magisterio a los jóvenes que hoy se dedican a otras profesiones dedefiando ésta como tarea ingrata improductiva y enojosa. Todo intento de reforma deberá comenzar por este aumento de renta, cosa que ya se ha intentado; pero que el interés mal comprendido de los propietarios, que forman la mayoría de nuestro Congreso rechazó sin discusión, creando en cambio rentas cuyo cobro es muy difícil y que en la práctica serán ilusorias.

No quiero entrar en el estudio de la cuestión económica señalando la manera exacta de aumentar la renta de instrucción pública porque esto me llevaría a consideraciones de otro género y así no discutiré si la propiedad es o no susceptible de sufrir un aumento de gravamen como se ha propuesto para el ya indicado objeto; si bien asignando especialmente su producto a la construcción escolar.

En mi concepto, no es suficiente aumentar sólo la renta anual sino que, siendo imprescindible e inaplazable la urgencia de emprender sin pérdida de tiempo la reforma de nuestra enseñanza, el Estado debería procurar un crédito extraordinario, por medio de un empréstito de cinco millones de sucres, con el objeto de llenar las necesidades más urgentes en orden al mejoramiento de los locales y del material y a la fundación de escuelas normales en número suficiente para dar, a la vuelta de pocos años, un profesorado instruido y apto. Mejorando las rentas será posible elevar los sueldos de los profesores de manera que éstos los pongan en la situación social que deben tener; y este aumento de sueldo debería asignárseles en relación con el número de años de servicio: creo que el sueldo mínimo debería ser fijado en S. 1,000 anuales para la región de la sierra y S. 1,200 para la costa y S. 1,500 en la Provincia de Oriente y en las Islas Galápagos.

Los aumentos se harían en la progresión de un 30 por ciento de cada quinquenio de servicio no interrumpido por separación voluntaria; así un profesor de segunda clase con cinco años de servicio ganaría \$ 130 mensuales y uno de primera \$ 160 con derecho a aumentar al llegar a ser nombrado Director de escuela primaria superior, \$ 300 al cumplir sus 20 años de servicio.

En las escuelas rurales se aumentaría el derecho de los productos del huerto adjunto y alojamiento por cuenta del Estado. De este modo, los jóvenes salidos de las escuelas

normales podrían tener por delante una carrera que si modesta, por lo menos, les aseguraría una situación cómoda y estable.

Asegurada la reforma del sueldo es necesario asegurar también la estabilidad de la posición garantizando a los profesores el que no puedan ser separados de su puesto sino por causales de mala conducta o de enfermedad contagiosa e incapacidad física notoria, o por falta contra la ley y los reglamentos.

Asimismo el criterio que debe presidir los cambios que pudieran ejecutarse debe ser el de no tratar de perjudicar a los trasladados, logrando por ésta y otras ventajas atraer los jóvenes a las escuelas normales. Pasaremos a hablar de la reorganización de éstas.

Nuestros institutos normales han tenido el mismo defecto que todos nuestros planteles: falta de profesorado competente, de local y material apropiado y de buena organización. Son éstas tres cosas las que se deben procurar en los que actualmente tenemos y en los que nuevamente se funden. Algo se ha hecho en este sentido y después de traer algunos profesores extranjeros se trata de levantar nuevos edificios y de dotar de buen material de enseñanza a las escuelas normales de Quito.

Respecto al profesorado extranjero es imprescindible apelar á él porque alguien ha de comenzar la iniciación del magisterio en los nuevos métodos y ese alguien ha de ser quien los haya practicado y visto emplear y éstos no pueden ser otros que profesores educados y prácticos, formados en las escuelas extranjeras en donde han tenido origen y se observan desde hace mucho tiempo.

Respecto a su nacionalidad el ejemplo de diversas naciones de Sud América cuya índole y espíritu se asemejan mucho al de nuestro pueblo nos hace ver que en realidad es un asunto secundario. Aunque Alemania es la nación que entre todas marcha a la cabeza de la pedagogía, algunos creen que los profesores belgas o suizos más dúctiles, más eclécticos y por consiguiente más adaptables a nuestro temperamento y serían preferibles y educarían mejor nuestra juventud. Pero el mismo ejemplo que he citado de otras naciones sudamericanas nos demuestra que los alemanes a pesar de su inflexibilidad y dogmatismo bien pueden ser los educadores de los pueblos latino-americanos.

Los profesores recién llegados para las escuelas normales de Quito son alemanes y a fin de no introducir desorden en la unidad de los métodos será necesario insistir en la vía que se ha comenzado a seguir toda vez que ella no presenta grandes obstáculos ni inconvenientes.

Con un personal convenientemente escogido se deberían fundar escuelas normales en las cuatro principales ciudades del Ecuador: Quito, Guayaquil, Cuenca y Riobamba y en número de una para cada sexo en cada una de dichas poblaciones.

Nada decimos de la edificación de los locales sino que ella debe corresponder a las actuales exigencias pedagógicas y que no se debe prescindir del campo para experiencias agrícolas que les debe estar adjunto.

Al comienzo, el número de plazas de cada una de ellas debe ser de 200, disminuyéndose después a medida de las necesidades, con el objeto de evitar la aglomeración de los graduados; no debe olvidarse que en el actual profesorado hay una gran cantidad de jóvenes susceptibles de asimilar cultura y con los cuales el Estado tiene contraída una deuda por razón de los servicios ya prestados.

Para estos jóvenes sería preciso crear cursos especiales de aplicación en los cuales y en breve tiempo puedan ponerse al corriente de la manera cómo funcionan las escuelas primarias y cómo se enseña en ellas en los países más cultos y adelantados que el nuestro.

Algo de esto se ha intentado ya en la Provincia de Pichincha, pero se ha tropezado con el inconveniente de que los maestros oponen una resistencia realmente formidable a una medida que sólo redundaba en provecho de ellos mismos.

En lo sucesivo y ante la amenaza de ser despedidos o reemplazados por los nuevos maestros, no dudo, que la medida tenga el resultado práctico que ha dado en otros países. Así el profesorado renovado y remozado al corriente con la técnica peda-

gógica moderna podría corresponder a los esfuerzos que hagan los directores del ramo de instrucción pública y marchar al día con los progresos profesionales en vez de mantenerse retraído del movimiento pedagógico.

Sin esta condición no hay mejora posible para nuestra enseñanza y toda mejora material resultaría vana y estéril.

No quiero decir con esto que se ha de echar a un lado como cosa inútil a los profesores antiguos, pero su eliminación, cosa que se impone, puede ser hecha lentamente jubilandos a los que estuvieran en actitud de aspirar a esta gracia además de que si se hace el aumento de escuelas de que hemos hablado, siempre serán necesarios los servicios de gran número de ellos.

CAPÍTULO DÉCIMO.—REFORMA ESCOLAR—LOS LOCALES.

Una vez reorganizado el magisterio será preciso que los locales y el material correspondan a las ideas nuevas adquiridas por los nuevos maestros.

Lo mismo que he dicho respecto a los locales de las escuelas de profesores normalistas diré respecto a la futura construcción escolar. Mucho se ha escrito a este respecto y no habría más que recurrir a los datos, planos y proyectos ya presentados para decidirse por el que más conviniera con arreglo a cada localidad. Las condiciones generales son harto bien conocidas para que debamos insistir en ellas.

Que no falten buenos retretes, lavabos, duchas, el indispensable gimnasio y un pedazo de terreno adjunto para campo de recreo y juego y para la experimentación agrícola aún hasta en las ciudades. Con todo copiamos la instrucción técnico-higiénica dictada por el Ministerio de Instrucción Pública de España que tomamos de la obra de Félix Martí Alpera, titulada "Las Escuelas Rurales," que nos parece muy apropiada para nuestro país. Tiene por objeto esta instrucción condensar las opiniones más autorizadas y admitidas entre pedagogos e higienistas respecto a los múltiples puntos relacionados con la escuela primaria, y especialmente en lo que afectan a la construcción de nuevos edificios escolares.

La promiscuidad de alumnos de todas las edades y aún de sexos distintos en un solo local, faltar de todo atractivo y sin ninguna condición higiénica, constituye hoy el régimen usual y corriente de la inmensa mayoría de las escuelas de nuestra patria; y sin desconocer las enormes dificultades de la transición de este defectuoso sistema de la escuela unitaria, al cual van unidos estériles y anticuados procedimientos de enseñanza, a las fructíferas prácticas de la moderna pedagogía, acreditadas ya en otras naciones y ensayadas en la nuestra ventajosamente, se hace indispensable abandonar la rutina y entrar de lleno, decididamente y sin omitir sacrificios, en derroteros más fecundos.

Hay que enderezar la reforma pedagógica de las escuelas de instrucción primaria en el sentido de la racional graduación de la enseñanza y de la clasificación de los alumnos por edad y grados de cultura, constituyendo grupos homogéneos, a cargo cada uno de un solo maestro; y como es indudable que ningún edificio, de cualquier género que sea, puede ser útil si no se dispone y construye con arreglo al régimen de vida que dentro de él haya de hacerse, resulta necesario que todo proyecto de construcción para nuevas escuelas se ajuste en lo sucesivo, en cuanto sea dable, respecto a la disposición, número y dimensiones de las salas de clase, a dicho principio pedagógico de la gradual y separada distribución de los alumnos, perfectamenteavenida con los preceptos de la más severa higiene. Las prescripciones de esta instrucción servirán de base a los trabajos de los arquitectos que hayan de proyectar y dirigir las obras de fábrica, y serán tenidas en cuenta por los ayuntamientos, los maestros y cuantas entidades intervengan en la construcción y empleo de los edificios escolares.

I. UBICACIÓN.

Las escuelas deberán situarse en sitio alto, seco, bien soleado y aislado de otras edificaciones; a ser posible estarán próximas a jardines, plazas o anchas vías de poco

tránsito y se evitará la proximidad de cementerios, hospitales o cuarteles, centros de espectáculos y de reunión pública, talleres insalubres, tabernas y en general, de toda causa que engendre el mefitismo del aire y exponga a los escolares a tropiezos de que es necesario apartarlos.

El mejor sitio será en pleno campo, aunque resulte algo alejado del centro de la población, pues este inconveniente se compensa con la indudable ventaja del ejercicio físico a que obliga a los niños y con la pureza del aire que han de respirar.

El terreno será llano, o mejor con ligera pendiente, sin elegir, ni la parte más alta, que expone a vientos desagradables, ni la más baja, por temor a humedades peligrosas.

El nivel de las aguas subterráneas indicado por el de los pozos de la región, y determinado siempre con anterioridad a la definitiva elección del terreno, no distará nunca menos de un metro del suelo de los sótanos o de la base de la cimentación.

Donde no haya un terreno en estas condiciones, se utilizarán para sanearle todos los medios apropiados (como drenajes, conductos, pozos, etc.), y no se cimentará sino sobre una espesa capa de cal hidráulica, tierra arcillosa, grava, asfalto o cualquiera otra substancia que no sea higroscópica.

Se evitará con especial cuidado la vecindad de muladares, estercoleros, cloacas, pantanos, lagunas, arrozales o de cualquier lugar cuyas emanaciones pueden viciar el aire.

II. ORIENTACIÓN.

El clima de cada localidad determinará, más que ningún otro factor, la posición que el edificio escolar ha de tener respecto a los puntos cardinales, a fin de procurarle la mayor protección posible contra los agentes exteriores, calor, viento o lluvia.

En las regiones cálidas, la fachada principal se orientará al Norte; en las frías, al Sur; al Nordeste y Este en las templadas.

Si la disposición del terreno imposibilita las orientaciones apuntadas, se procurará, al menos, que las clases y demás dependencias importantes del edificio queden resguardadas del O. y S. O., tan calurosos durante la mitad del año en nuestro clima y de donde proceden casi siempre los vientos de lluvia.

El muro en que se abran las ventanas por que haya de recibir la iluminación principal cualquier sala de clase, se orientará hacia el cuadrante N. E. y N. O.; en el caso de que ésto no fuera posible, se procurará aproximarse a esta orientación.

III. EXTENSIÓN.

La extensión del terreno y las dimensiones del edificio, deben estar en relación con el número de alumnos que hayan de asistir a la escuela, calculando, por regla general, que éstos constituyen un 15 ó 20 por ciento del vecindario total del Ayuntamiento o distrito a que la escuela se destine, teniendo en cuenta también el probable aumento por el posterior desarrollo de la población.

A la superficie de terreno que sea necesario para el edificio se añadirá una extensión de tres a cuatro metros cuadrados por alumno para jardín o patio.

Cuando la escuela no pueda establecerse en las afueras de la población, deberá quedar siempre al rededor del edificio una zona continúa de diez metros de anchura.

Como medida general, por razones de pedagogía e higiene, no deben construirse grandes grupos escolares.

IV. CONSTRUCCIÓN.

El edificio de la escuela debe ser de sólida construcción y de sencillo y elegante aspecto.

La naturaleza de los materiales que hayan de emplearse variarían necesariamente con los recursos, las costumbres y la geología de cada localidad; pero importa siempre que sean sólidos, ligeros, malos conductores del calor, impermeables y compactos, excluyendo, desde luego, los que resulten de puro lujo o aquellos cuyo transporte

ocasione grandes desembolsos, a menos que sean indispensables por razones de solidez o de salubridad del edificio.

Los materiales metálicos, por su escaso volumen, su incombustibilidad y resistencia, son muy recomendables, en zonas frías o templadas.

Entre las piedras naturales, las calizas, topáceas y areniscas reúnen las condiciones requeridas.

Los ladrillos bien cocidos y secos, y particularmente los huecos y tubulares pueden reemplazar con ventaja, a la piedra granítica.

El cemento se recomienda para muros y solados en los lugares en que sea de temer la humedad.

Las maderas deben ser secas, impermeabilizadas y hechas asépticas si han de utilizarse para pavimentos o empotrarse en los muros; si se emplean húmedas o sin preparación se pudren fácilmente y se convierten en humus bajo la acción de los parásitos vegetales y animales que las destruyen rápidamente.

Los muros serán de conveniente espesor, nunca inferior a 35 centímetros, en países fríos o templados. Cuando sea posible, se construirán dobles con interposición de una capa de aire o de un cuerpo mal conductor del calor.

Los tejados de zinc o estaño galvanizado resultan muy calientes en verano y fríos en invierno, pero siendo perfectamente impermeables, dan excelente resultado cuando se interpone un cuerpo mal conductor o se deja un espacio vacío entre estos tejados y el techo del edificio.

La teja es económica, pero resiste mal la lluvia y el viento.

La pizarra cubre mejor, pero no tiene duración superior a cuatro o cinco años.

Cualesquiera que sean los materiales que se empleen, los tejados se dispondrán en doble plano inclinado, provistos de aberturas utilizables para la ventilación.

La disposición en terraza no se admitirá en ningún caso.

Se instalarán los pararrayos necesarios para preservar al edificio de la electricidad atmosférica en tiempo de tormenta.

V. LOCALES.

Poderosas razones de carácter higiénico, económico y pedagógico justifican la prohibición de que las viviendas de los maestros se establezcan en los mismos edificios de las escuelas, y esta consideración habría de tenerse muy presente al proyectar las nuevas construcciones.

Por regla general, las dependencias de que deberá constar una escuela completa, son las siguientes:

A. Vestíbulo que sirva de sala de espera a los niños y a sus encargados hasta la hora de entrada y de salida de las clases.

Este vestíbulo estará en proporción superficial a la importancia del edificio, y tendrá el número de asientos necesarios para comodidad de las personas que acuden a recoger a los escolares.

B. Un cuarto destinado a guardarropa, habilitado en forma que permita la colocación de las perchas en condiciones de no ofrecer molestias ni dificultad alguna al libre tránsito.

C. Los necesarios salones de clase en relación con el número de alumnos y de grupos de éstos, según los grados y secciones de la enseñanza.

D. Despacho en que el maestro recibirá a los alumnos o a sus familias cuando el caso lo exija.

E. Patio cubierto para el recreo cuando el tiempo no consienta que los juegos se celebren al aire libre.

F. Campo enarenado y con plantación de árboles, donde puedan recrearse los niños durante las horas de menos frío o calor.

El acceso a los patios y jardines, cuando el nivel resulte distinto al de las dependencias, se hará por medio de rampas suaves, evitando los escalones en todos los casos en que la disposición de los locales lo permita.

La pendiente del suelo de los patios será inferior a 0.3 por metro, y su extensión superficial no será nunca menor de 150 metros cuadrados.

En los patios se instalará una fuente de agua potable, provista de su correspondiente llave.

G. Retretes y urinarios, a razón de uno por cada veinte, y por cada quince alumnos, respectivamente.

Cada retrete estará aislado de los demás por tabiques altos y provistos de una puerta que se cerrará por dentro y que por su parte inferior quedará a 0.30 metros del suelo. El mínimo por cada retrete será de 80 centímetros de anchura por un metro de profundidad, la altura de los aparatos oscilará entre 30 y 50 centímetros.

Los asientos serán de madera dura, y al no utilizarse, se levantarán automáticamente.

Se situarán orientados al Norte y lo más distante posible de las clases.

Sus paredes serán de cemento, pizarra o cualquier otra substancia impermeable, y sus ángulos serán redondeados para facilitar los frecuentes lavados a que deben someterse.

Los suelos serán igualmente impermeables, y se dispondrán con la suficiente pendiente para que las aguas que sobre él escurran se viertan en el tubo de desagüe del retrete y al canal del urinario, que deberán estar provistos de un cierre hidráulico.

Tanto los retretes como los urinarios serán de los llamados inodoros y en ellos se procurará asegurar una verdadera profusión de agua.

Ningún tubo de desagüe debe pasar por debajo del suelo de las habitaciones.

Los sifones son absolutamente indispensables en todos los conductos de desagüe.

Se prohíbe en lo absoluto el sistema llamado a la turca.

Los urinarios tendrán aproximadamente un ancho de 0.40 centímetros una salida de 0.30 y una altura de 1.50.

En las localidades en que se carezca de alcantarillado se dispondrán fosas o pozos Mouras. Sus dimensiones mínimas serán de unos dos metros en sentido horizontal, e igualmente en su altura. Serán impermeables y de ángulos redondeados. Tendrán en su fondo una concavidad en forma de cubeta y se construirá sobre ellos una chimenea de ventilación.

H. Un lavabo, al menos, por cada veinte niños, donde encontrarán jabón y agua abundante. Estos lavabos se instalarán cerca de la fuente de agua potable, o mejor aún en la sala en que se coloquen los urinarios y excusados. Los paños o toallas, siempre blancos, se renovarán diariamente. Siendo posible, deben usarse toallas de papel absorbente que es lo más moderno, barato e higiénico.

I. Biblioteca popular.

J. Museo escolar.

K. Donde sea posible, se construirá un salón para exámenes, reparto de premios, conferencias, etc.

Estos tres últimos locales se ajustarán, respecto a sus dimensiones y mobiliario, al fin especial de cada uno de ellos.

La biblioteca y museo podrán estar reunidos o separados, según su importancia. Tendrán su entrada independiente de la de las habitaciones de la escuela y estarán situadas en la proximidad de las clases y en condiciones de ser vigiladas por el maestro.

En las escuelas cuya importancia lo exige habrá un taller para trabajos manuales.

Además de los locales expresados conviene tener dispuesta una habitación con dos o tres camas para reposo de los niños que se encuentren indispuestos, y una pequeña cocina para calentar los alimentos de los alumnos que permanezcan en la escuela, con arreglo al régimen de ésta.

VI. CLASES.

Para determinar en cada caso el número de aulas de que debe estar dotado el edificio escolar, habrá que tener en cuenta no solamente el número de alumnos que reciban la enseñanza, sino también los grupos homogéneos en que habrá de dividirse,

según los grados y secciones que se establezcan con arreglo al fundamento de la enseñanza gradual. Si la concurrencia a la escuela fuese muy numerosa, los tres grados de párvulos, elemental y superior, que ordinariamente se establecen, se aumentarían en un cuarto, llamado ampliado, intermedio entre elemental y superior, subdividiendo estos grados en las convenientes secciones.

Cada grupo habrá de recibir la enseñanza, siempre que sea posible, en distintos locales, que, cuando el edificio lo permita, estarán situados en la planta baja; a fin de evitar la humedad, su pavimento se elevará 0.80 metros lo menos sobre el nivel del piso exterior, y estará formado, bien de maderas sin ranuras y barnizados con alguna preparación oleosa, bien de asfalto, portland o mezclas continuas. Donde no sea posible hacer este solado se utilizarán ladrillos cocidos. Las paredes serán lisas y estucadas o pintadas de manera que toleren el lavado, y coloreadas de tonos claros en azul, verde o gris. Los ángulos estarán redondeados para facilitar la limpieza. No se colgará en los muros ningún material de enseñanza para evitar que sirva de depósito de polvo y por razones pedagógicas muy atendibles.

Cuando se entarimen los pisos se hará descansar la madera sobre una capa de asfalto, o mejor aún, sobre tabiques o bovedillas de ladrillos de unos 0.20 metro de altura que forma un pequeño espacio lleno de aire, cuidando de disponer en las paredes exteriores los ventiladores necesarios para su renovación.

La forma de la clase será perfectamente rectangular y tendrá una superficie mínima de 1.20 metros cuadrados por alumno, y una altura mínima también de 4 metros. Esta cubicación varía, en razón directa de la edad de los educandos, pero nunca será inferior a los límites señalados.

La longitud mínima de las clases será de 9 metros.

Su capacidad se calculará cuando menos para 25 alumnos y cuando más para 40 o 45 en la enseñanza graduada. Para las escuelas ordinarias, mixtas o de un solo sexo, los proyectos de sala de clase se harán para 60 alumnos.

Los muros estarán rodeados, a 1.50 metros de altura por un zócalo de madera o de tela pizarra.

Las ventanas se abrirán en los lados mayores del rectángulo y con verdadera pro-fusión, para que la luz llegue a todas las partes de la clase. Se elevarán del suelo unos 2 metros, y su dintel superior se colocará próximamente a una altura igual a dos tercios de la clase.

Como regla general, debe procurarse que de cualquier punto de la habitación pueda el alumno, estando sentado, dirigir la vista a la correspondiente ventana lateral y contemplar el cielo.

La luz deberá recibirse con mayor intensidad por el lado izquierdo, nunca de frente ni de espalda.

Los huecos de ventana sólo se coronarán con arcos, vigas o cargaderos necesarios, inmediatamente debajo del piso o techo, para que el hueco quede a la mayor altura.

La carpintería de la ventana estará dividida en montantes y hojas interiores. Estas podrán abrir girando alrededor de ejes verticales.

El montante permitirá abrir parcialmente, por medio de cordones o cadenas, sobre ejes horizontales, para graduar a voluntad las aberturas como medio auxiliar de ventilación.

Las cortinas, de un tono gris por preferencia, deben instalarse de manera que puedan desplegarse de abajo a arriba, en vez de arriba abajo como de ordinario.

Las ventanas estarán provistas de vidrios transparentes, no debiendo utilizarse los deslustrados.

VII. VENTILACIÓN.

El aire, viciado por la difusión en la atmósfera de los gases de la aspiración, por los productos volátiles de la transpiración cutánea; por las emanaciones gaseosas u orgánicas del tubo digestivo; por los funcionamientos de los aparatos de calefacción e iluminación, y por el polvo que constantemente se agita dentro del local, debe renovarse

con gran frecuencia y amplitud, utilizando para ello los procedimientos de ventilación llamados naturales, que son indudablemente los más completos y ventajosos, y, en su defecto, usando los procedimientos mecánicos o artificiales que satisfagan completamente su interesantísima finalidad.

La ventilación natural más sencilla, que consiste en abrir todas o partes de las puertas y ventanas de los locales para establecer corrientes de aire, no podrá utilizarse cuando los niños se encuentren en la escuela, y se empleará sólo y únicamente durante los recreos y al terminar las clases por mañana y tarde. La atmósfera interior no se enfría por éste procedimiento más que dos o tres grados a lo sumo.

Para asegurar y facilitar la aereación continua se establecerán ventiladores giratorios, periódicos, alternados, Varley, Castaring, o cualesquier otros que activen y fomenten el movimiento de la atmósfera.

De entre ellos los alternados correspondientes, que consisten en unas aberturas practicadas en los dos lados mayores del local y dispuestas de tal suerte que unas correspondan a la parte inferior y otras a la superior de las paredes son muy recomendables.

Las aberturas correspondientes a la parte inferior distarán 10 o 15 centímetros del suelo, y las correspondientes a la superior se situarán a ras del techo. Unas y otras estarán provistas de un enrejado metálico y de un registro regulador.

El área de los orificios de entrada debe ser por lo menos igual a los de salida.

Nada de cuanto se construya e instale para garantizar la continua y eficaz renovación del aire podrá considerarse como superfluo. Téngase sólo en cuenta que esta renovación no debe aparejar nunca bruscos cambios de temperatura que puedan comprometer la salud de los escolares.

VIII. ILUMINACIÓN.

La defectuosa iluminación de las escuelas es una de las causas productoras más frecuentes, de la miopía y de otras enfermedades de la vista de los niños.

La luz abundante no es sólo necesaria al normal funcionamiento del aparato de la visión, sino también, un poderoso excitante de la nutrición general, y por tanto, de la salud y de la alegría de la infancia.

El principio axiomático de que "una clase no recibe jamás bastante luz," se tendrá muy presente al atender a esta necesidad en las nuevas construcciones.

En general, se procurará que el alumno que ocupe en la clase el lugar menos iluminado pueda escribir y leer los caracteres ordinarios sin esfuerzo alguno.

La iluminación natural debe acercarse lo más posible a la exterior; ser constante, uniforme, difusa y no reflejada. Para ello penetrará por la parte alta de las ventanas, con un ángulo de 35° a 45° sin acercarse nunca a la horizontal.

Si la luz se recibe sólo por delante, molesta a los alumnos y les impide ver con claridad al maestro y la mesa.

La iluminación posterior es no menos defectuosa a causa de la sombra que proyecta hacia adelante. Combinada con la lateral es más aceptable.

La iluminación cenital no es conveniente en las escuelas. Los techos vidriados son de difícil construcción y expuestos a oscurecerse con la nieve y el polvo, produciendo durante el verano un calor intolerable.

La iluminación por los lados puede ser unilateral, bilateral o diferencial; es decir, bilateral, con predominio de uno de los lados, que es generalmente el izquierdo. Estas y especialmente la última, son las más recomendables, y con arreglo a este criterio se aconsejó cuanto referente a las ventanas de las clases queda consignado en el capítulo VI de estas instrucciones.

La iluminación artificial, utilizable únicamente para escuelas de adultos o en circunstancias excepcionales, se amoldará a los recursos de cada localidad, procurando siempre que sea intensa y fija.

Cuando no haya luz eléctrica y la necesidad obligue a establecer lámparas de petróleo o gas, deben usarse tubos purificadores de los productos combustibles.

Las luces se colocarán a 1.50 metros sobre la cabeza de los alumnos. La mayor o menor intensidad del foco luminoso determinará en cada caso el número de alumnos que deberán agruparse a su alrededor.

Las diferentes fuentes de iluminación artificial pueden agruparse en el orden siguiente:

1°. Desde el punto de vista del desprendimiento de calor: Electricidad, petróleo, gas, aceite, bujía.

2°. Desde el punto de vista de la abundancia de rayos amarillos (de menor a mayor): electricidad, petróleo, gas, aceite, bujía.

3°. Desde el punto de vista de la viciación del aire (de menor a mayor): Electricidad, petróleo, aceite, gas.

4°. Desde el punto de vista de la fijeza: aceite, petróleo, gas, bujía.

IX. CALEFACCIÓN.

En una clase de dimensiones ordinarias, que contenga el número de alumnos reglamentario, y cuya salida esté cerrada, el calor producido por la respiración de los alumnos bastará a compensar el enfriamiento que se opere por las paredes y las ventanas.

Por otra parte, los procedimientos o aparatos de calefacción más perfectos son de difícil instalación y elevadísimo costo, y los más baratos y sencillos tales como braseros, estufas y chimeneas, roban oxígeno y son peligrosos en estancias que han de ser ocupadas por niños por regla general irreflexivos.

No obstante esto, y como en algunos días y en algunas regiones se impondrá la necesidad de templar la atmósfera de las clases, hay que elegir el procedimiento menos malo de los que se usan ordinariamente.

Las estufas de envolvente de tierra refractaria, provistas de un recipiente de aguas y protegidas a su alrededor por una valla, de tela metálica, distancia mínima de 60 centímetros, y con una altura de 1.50 a 2 metros, se preferirán siempre a las que tengan de hierro la caja de fuego.

Las salidas de humo, establecidas por tubos perfectamente ajustados, se llevarán hasta la parte más alta del edificio.

La temperatura a que se procurará mantener el aire de las clases será de 15 a 16 grados centígrados próximamente.

Sólomente unos comentarios relativos a varios extremos, especialmente a la prohibición no deben rezar con las escuelas rurales.

En las escuelas graduadas de las grandes poblaciones no debe haber más vivienda que la del portero o conserje. Si se alojan en ellas los profesores, la escuela vendría a ser un anexo secundario de la casa de éstos. Pero en los pueblos pequeños la escuela no tiene personal alguno de servicio y vigilancia, y tanto por ésto, como por la dificultad de encontrar alojamiento para el maestro, como por la necesidad de cuidar el jardín y de atender al servicio de la biblioteca escolar y del museo agrícola, en las construcciones escolares rurales, deben reservarse algunas habitaciones para vivienda del maestro y su familia. Además, la falta de una casa-habitación suficiente por su capacidad y aceptable por sus condiciones higiénicas es frecuentemente causa de malestar y descontento en nuestro magisterio rural. Y como este descontento influye en la estabilidad de los maestros en el mismo pueblo y repercute en la enseñanza, es de interés general asegurar al maestro un albergue espacioso, cómodo y sano, y la manera de conseguirlo para siempre es sin duda la de hacer que este albergue forme parte de la construcción general de la escuela.

Tómense a favor de la escuela todas las garantías de aislamiento y de independencia que se quieran; procúrese que las entradas de la escuela y de la casa del maestro sean distintas y que de tal modo se dispongan las cosas que ni la vecindad de la familia del profesor moleste a los niños y perturbe la vida escolar, ni la actividad de los muchachos y sus inevitables expansiones puedan perjudicar a los parientes del maestro.

En el apartado III de la Instrucción técnico-higiénica se dice con gran acierto que la extensión del terreno y las dimensiones del edificio deben estar en relación con el número de alumnos que hayan de asistir a la escuela, calculando, por regla general, que éstos constituyen un 15 o un 20 por ciento del vecindario total del ayuntamiento o distrito a que la escuela se destine, y teniendo en cuenta también el probable aumento por el posterior desarrollo de la población.

En el Apartado VI de la Instrucción se dice que la longitud mínima de las salas de clase debe ser de 9 metros. Esta longitud en nuestro concepto debiera ser la máxima y no la mínima, como se propone.

Como hemos dicho, las sales de clases no deben ser excesivamente espaciaosas; pero añadamos ahora que tampoco deben ser largas y estrechas. Si son demasiado grandes el maestro necesita esforzar demasiado la voz y a causa de ello contrae una fatiga física inmediata que le resta fuerzas desde los primeros momentos y le impide conservar hasta el último instante de la lección el vigor y la frescura que debe tener su palabra. La clase, además, pierde aquel tono de conversación íntima, insinuante, amistosa, que debe tener la enseñanza escolar. Si la sala es muy larga, es decir, si tiene más de 9 metros de longitud, los alumnos de las últimas filas de mesas no ven siempre los detalles de un mapa, de un dibujo, de un escrito, etc., colocados en la pared del frente que es de donde habla y muestra las cosas el maestro generalmente. A veces ni aún oyen clara y distintamente la palabra de éste.

La mejor sala de clase sería sin duda la rectangular apaisada, es decir, una sala de clase más ancha que larga, o lo que es lo mismo, con la gran pizarra del fondo y la mesa del maestro colocadas en uno de los fondos mas largos del rectángulo. Así tiene el maestro a todos los niños más cerca y los últimos ven u oyen con más facilidad. Sin embargo, esta forma se opone a veces a una buena y completa iluminación.

No se recomendará nunca bastante que las ventanas sean grandes. En las escuelas extranjeras de reciente construcción que hemos visitado, lo son tanto y tan estrechos los espacios que separan una ventana de otra, que todas ellas producen la impresión de un tabique o pared de cristales. Las puertas de madera de estas ventanas deben suprimirse por innecesarias, y, en lugar de ellas, debe aplicarse un buen sistema de "stores" o cortinas.

Finalmente, se echa de menos en la Instrucción técnico-higiénica oficial la indicación de recomendaciones y consejos especiales para los distintos tipos de edificios escolares que exige la diversidad de climas de nuestra patria. Propone, por ejemplo, la Instrucción que los suelos de las clases sean de madera y de madera los zócalos de las clases. Pues bién, esto, tratándose de las regiones cálidas o templadas de nuestra península, no es nunca recomendable, siendo preferible, por el contrario, el enlosado con losas de cemento y los zócalos de azulejos blancos o ligeramente azulados que no puedan rayarse y que son además de fácil limpieza.

El Gobierno de los Estados Unidos, en la zona del Canal, y por razón del clima cálido, ha construído los edificios para escuelas, con techos altos, grandes corredores alrededor de todo el edificio, paredes sin más altura que 1.60 metros y el todo protegido por tela metálica.

CAPÍTULO UNDÉSIMO.—REFORMA ESCOLAR—EL MATERIAL—LOS LIBROS DE TEXTOS.

Hemos hablado bastante acerca de las deficiencias del material que se emplea en las escuelas.

Como las indicaciones acerca de las cualidades que debe tener un buen mobiliario escolar pueden encontrarse fácilmente en cualquier tratado de higiene, no insistiré aquí sobre ellas porque sería divagar sobre un asunto ya bien tratado. Diré solamente algunas palabras respecto a ciertas particularidades en relación con nuestras condiciones especiales.

Se ha comenzado a sustituir en las escuelas públicas los antiguos bancones de madera por asientos bi-personales pedidos al exterior.

Con el objeto de evitar que salga del país una gran cantidad de dinero que podría circular en él, estimulando la industria nacional, había buscado durante bastante tiempo la manera de lograr que el mobiliario de las escuelas fuera construido en el país. Pero una de las materias primas, el hierro, escasea entre nosotros por no producirse en nuestra región y la otra, la madera, aunque debe haber una gran variedad y entre ellas algunas a propósito para estas construcciones, no tiene la ligereza ni la solidez que el haya o el pino de América, que se importan. Por esto y por la carestía de la mano de obra se comprende que la Oficina de Fomento Escolar haya preferido comprarlas en el extranjero a un precio que no habría podido obtener en el país representando así, una mejora en la calidad del material y un ahorro de dinero en el costo. Sin embargo dado el desarrollo de los niños de los Estados Unidos, superiores en estatura a los nuestros, los tamaños ordinarios de las sillas y las mesas, deberían ser modificados, hasta que por medio de la reforma de nuestra alimentación, de la gimnasia y de la educación física produzcamos una raza de talla más alta, pues comunmente los mobiliarios adaptados por los fabricantes no corresponden al tamaño de nuestros escolares.

En cuanto a las pizarras, se ha comenzado asimismo a efectuar un cambio del sistema de ellas, adaptándose un modelo que ha sido recomendado por la Oficina de Fomento Escolar.

Hubiera sido de desear, que en lugar del modelo escogido se hubiera preferido el sistema de suspensión de poleas con dos hojas de pizarra o tablero sustituable.

Asimismo debería tenerse en cuenta que el tablero no fuera barnizado con un barniz brillante sino al contrario con un barniz mate según las prescripciones higiénicas con el objeto de evitar la reflexión de la luz. Las pizarras de mano, ordinariamente empleadas, deberían suprimirse.

Como en materia de textos nacionales está casi todo por hacer, sería asunto de la Dirección General de Instrucción Pública, si llegara a ser creada, o del Consejo de Instrucción Pública, la promoción de concursos con buenos premios de estímulos para los textos que más urgentemente se necesitan, como geografía e historia patria, moral y educación cívica, etc., en la impresión de estos textos se debería tener en cuenta la cuestión del papel y del tipo de letras empleados, por la gran influencia que tienen sobre la vista del escolar.

Pero más que esta necesidad higiénica, que debería observarse en la impresión de todos los textos, quiero hacer hincapié en la forma en que debe estar redactado el texto de historia para las escuelas, y el criterio que debiera animar a su autor. Como ha dicho muy bien Ingegneros, la historia de América está todavía por escribirse pues hasta aquí sólo tenemos crónicas en que se anotan hechos y fechas, pero en las que no existe ningún criterio filosófico y en las cuales la crítica histórica se ha cuidado bien poco de desentrañar las causas primeras de los acontecimientos relatados.

Nuestros libros de historia adolecen en general de este defecto, ya que la síntesis histórica apenas si comienza a ensayarse con las investigaciones bibliográficas que últimamente ha comenzado a publicar el erudito don Camilo Destruge.

Los textos de historias escritos para uso de las escuelas y colegios han adolecido de peores defectos pues han estado redactados casi siempre bajo la inspiración de las ideas políticas, dejando ver la parcialidad de sus autores a través de los relatos de revoluciones, guerras, batallas, combates, encuentros y escaramuzas que con cierta fruición relatan minuciosamente, tratando con saña a sus enemigos y mostrando color en los reveses de los propios. Por estar escrito en un estilo así rayano en la intemperancia fué borrado de la lista de textos oficiales el pequeño folleto que servía de texto de historia, últimamente.

El libro de historia patria que yo quisiera ver escrito para texto de nuestras escuelas debería ser lo más imparcial posible y debería estar destinado antes que a ningún otro objeto a desarrollar en los alumnos las ideas de patria y de nacionalidad. Debería estudiar el estado social y político de la América al verificarse la conquista, la pai-

ciología de las dos razas que se confundieron, la conquistadora y la conquistada; estudiar las instituciones coloniales y su evolución social hasta la independencia, las causas económicas, sociales y políticas que determinaron esta gran epopeya; fundar con estos acontecimientos el orgullo nacional y el sentimiento patriótico; investigar el estado del país al comenzar su vida independiente; correr un velo misericordioso sobre el largo período de luchas civiles y guerras intestinas enseñando a miraras con horror y a considerarlas como una de las fases naturales del desarrollo de un pueblo sobre el cual pesaban las triples influencias de la educación, del ambiente y de la raza. Inspirado en estas ideas quien escriba el nuevo texto de historia dará preferencia al estudio del desarrollo nacional, relegando los hechos sangrientos a un segundo plano donde no aparezcan como heroicidades ni hazañas legendarias nuestras bárbaras contiendas civiles.

Por la preferencia que los autores han dado hasta aquí al relato de ellas, puede explicarse parcialmente cómo de la imaginación del pueblo aún no se borran las ideas revolucionarias y cómo predominan aún en nuestro país los espíritus díscolos e inquietos; cómo se forja en la imaginación popular la figura fantástica del caudillo de montoneras; y cómo la estabilidad de la paz no puede ser aún un hecho consumado.

Este libro no debe tener un final pesimista: al contrario, inspirar a los alumnos la confianza en el porvenir del país y en su progreso; siempre que sus hijos cambien de manera de ser y siempre que, aprovechando las lecciones que nos da el pasado, hagamos un esfuerzo para seguir una conducta distinta de la que hasta hoy hemos llevado.

La falta de un buen mapa escolar se ha hecho sentir y un grupo de ciudadanos ilustrados y patriotas se ha venido preocupando de la formación de un servicio geográfico con este objeto y con el de dotar a la República de un mapa detallado y exacto que sirviera para los trabajos del Estado Mayor del Ejército. Ójalá que sus laudables esfuerzos sean coronados por el éxito y logren llevar a cabo su buen propósito.

En fin, se hace necesario dotar a las escuelas de láminas para el estudio de las ciencias naturales y de la historia universal, láminas que ayudan mucho la tarea del maestro. Cuando nuestros profesores hayan aprendido en las escuelas normales el arte de la enseñanza, la química y la física elemental sin material de laboratorio y sólo con simples experiencias recreativas, se podrá pedir que cada escuela tenga una pequeña colección de objetos fabricados por el maestro y sus alumnos destinada á este propósito.

Asimismo una pequeña colección de hojas, de plantas, de muestras de madera y de minerales del país, de insectos, etc., serviría para el estudio de la historia natural.

Gran importancia debe darse a los cuadernos que hoy con las explicaciones orales han sustituido casi completamente a los libros de texto. Entre éstos una cuya adopción sería muy útil es el llamado cuaderno de rotación que en las escuelas francesas se lleva con gran esmero y cuidado. El cuaderno de rotación es un registro en que diariamente se anotan las lecciones y deberes de cada clase y todas las demás obligaciones y trabajos de los escolares, es por decirlo así el diario de la clase, su libro de bitácora como se diría en lenguaje marino.

Una reforma sustancial se necesitaría en lo que se refiere a los viejos y anticuados cuadernos de escrituras, los cuales están mandados retirar hace ya mucho tiempo del material pedagógico moderno. Lo mismo decimos en cuanto a los métodos de lectura y libros de textos que sirven para ella.

Concedamos una gran importancia a la lectura y conocimiento del lenguaje porque de ello depende que se podrán hacer con fruto los demás estudios: en efecto, en nuestras actuales escuelas la lectura constituye un acto casi mecánico. Como el niño desconoce casi siempre el valor y el significado de las palabras que pronuncia, generalmente muy mal y estropeándolas, casi siempre, esas palabras no despiertan ninguna idea en su cerebro y en los estudios que hace repite mecánicamente lo que rezan los libros de texto, sin comprender nada de lo que aprenden y como por otra parte el maestro no cuida de explicárselo ni de despertar en él la costumbre de discernir, resulta que

olvida prontamente las palabras aprendidas sin que dejen en su cerebro ninguna huella. Preguntaba yo cierto día a varios niños de una escuela: ¿Quién fundó la ciudad de Guayaquil? y al responderme que Francisco de Orellana: les dije, ¿y qué significa, qué quiere decir que fundó la ciudad de Guayaquil? ¿Qué significa ésto? No me respondieron y se miraron los unos a los otros como sorprendidos. Entonces les expliqué lo que era fundar una ciudad, y que era Guayaquil, antes de su fundación por los españoles.

Lo mismo les sucedía respecto de la frase de que Colón descubrió la América de la cual se repetían las palabras pero sin saber qué quería significarse con ellas; por esto creo que los libros de lectura a más de ser de comprensión fácil y rápida deberán ser comentados y explicados por los maestros haciéndose seguir los ejercicios de lectura de otro ejercicio que desarrollará en los niños la facultad de discernir y el valor y conocimiento de cada palabra del idioma, siendo éste un curso preparatorio de Gramática práctica.

Volviendo al cuaderno de rotación citaré las palabras de un ministro francés respecto a él:

El cuaderno de "roulement" es un modo de comprobación indiscutible de la buena marcha de los estudios en una escuela. Una ojeada sobre este cuaderno permite ver a la vez si el programa está bien seguido, si los temas de los deberes y de las lecciones se encadenan bien, y, al mismo tiempo, si los diferentes alumnos se hallan, si no con la misma capacidad, con la capacidad suficiente para seguir, cada uno con fruto, el curso hecho por todos. Es, en cierto modo, el diario de la clase misma; es el testimonio de los esfuerzos del maestro y de los esfuerzos de los alumnos; el libro en que se inscriben con regularidad automática, día por día, los resultados reales de la aplicación del programa, juzgado, no con un alumno escogido, sino con toda la clase.

En cuanto a la enseñanza de la gimnasia y a lo que se refiere al desarrollo corporal y físico de los alumnos, debería merecer atención especial dándose una gran importancia a esta enseñanza y dotando por consiguiente a las escuelas del material necesario para su ejercicio.

Aún está por dilucidarse qué es más ventajoso en nuestro país si los juegos o la gimnasia; pero la tendencia general es dar la preferencia a esta última.

Actualmente la enseñanza de ésta no puede ser más deplorable; ya hemos dicho que, careciendo las escuelas de locales adecuados en la ciudad de Guayaquil, con un clima tórrido y aún con la temperatura de 29° y con un sol ardiente se hacía caminar a los niños 3 ó 4 kilómetros para ir en las horas más fuertes del día a hacer ejercicios gimnásticos en la puerta del antiguo hipódromo. Los actuales ejercicios son los de la gimnasia sueca sin aparatos que se usa en el ejército.

Si se adaptara en las escuelas la organización del "boyscoutismo," una cantidad debería ser fijada en los presupuestos para los gastos que demandara esta enseñanza.

Por último y como una manera de fomentar el perfeccionamiento del material escolar se debería dar gran impulso a los museos pedagógicos y establecer anualmente una exposición provincial escolar, y cada dos años una nacional en Quito dando en ellas preferencia, sobre los bordados y trabajos de puro lujo y ornamentación, a los frutos del trabajo manual de aplicación que se efectuara en las escuelas. En la sección correspondiente del material de enseñanza los maestros tendrán ocasión de aprender mucho y de aplicar sus conocimientos presentando y proponiendo nuevos modelos de material de enseñanza.

En este ramo queda mucho por hacer, pero precisamente será éste uno de los que más se beneficiará del progreso pedagógico.

Dos palabras diré para terminar respecto a la índole y objetivo de la enseñanza en las escuelas primarias de nuestro país, tal como yo quisiera verlas funcionar. El primero de los deberes de un educador, sobre todo del maestro de escuela de un país democrático, es crear ciudadanos útiles, conscientes del cumplimiento de su deber y de las leyes y esencialmente morales por el convencimiento que debe tener cada cual de

que la observancia de ciertas reglas mantiene indisoluble el lazo que une a los asociados. Desde luego, la enseñanza de la moral se impone como una obligación del estado, desde que, la enseñanza laica es oficial y se ha suprimido la de la religión, como freno moralizador de las tendencias atávicas del hombre. Pero su enseñanza ha de ser lo más amplia, extensa y objetiva, no dada por un solo profesor como una asignatura cualquiera, sino por todos a la vez, procurando que el conjunto de las materias que forman el plan de enseñanza, tienda a la formación del carácter del niño y sobre todo a la creación de un carácter nacional.

La idea de patria debe ser inculcada desde bien temprano y con una persistencia verdaderamente tenaz, enseñándole a amarla y a desearla en virtud de ese amor, grande, fuerte y próspera. Ninguno de los medios puestos en práctica en todos los tiempos y en todos los países para conseguir este objeto, debe ser ahorrado. La exposición permanente de la bandera, los cantos patrióticos entonados al salir de la clase, los ejemplos y narraciones patéticas, las lecturas sobre temas en relación con el desarrollo del sentimiento de amor a la patria, todo en fin, cuanto hasta aquí se ha seguido, puede ser conjuntamente empleado para lograr este objeto.

La vulgarización y la difusión de la enseñanza cuenta hoy con un poderoso auxiliar en los cinematógrafos que permiten desarrollar ante su vista las imágenes animadas de las personas o de los objetos de los cuales se habla.

En nuestras escuelas y gracias a las facilidades dadas por la municipalidad, se ha implantado este género de enseñanza a la vez objetiva y recreativa, mediante sesiones matinales en los Domingos a las cuales asisten los niños de las escuelas.

Hasta aquí se han limitado a la exhibición de las películas ordinarias que a diario exhiben en los cinematógrafos seleccionando las más adecuadas. Ya que no es posible aspirar por lo pronto a que el cinematógrafo forme parte del material escolar deseáramos que mediante algún arreglo con las empresas cinematográficas se confeccionaran películas especiales con temas de moral, historia patria y geografía para exhibirlas a los alumnos y que los profesores dieran conferencias sencillas; pero bien inspiradas acerca de los mismos temas explicando las proyecciones.

Yo he propuesto antes de ahora la exhibición pública en calles y plazas de películas basadas en asuntos que expliquen de una manera objetiva y clara el amor a la patria y el respeto a la bandera, la obediencia a la autoridad y las leyes, los deberes cívicos, etc., y he insinuado a una sociedad que dé conferencias públicas con proyecciones, sacar a la calle y a la plaza pública esas conferencias proyectando películas confeccionadas ad hoc.

Quisiera aún más, y es que una docena de cinematógrafos destinados para ese objeto se pasearan por toda la República exhibiendo sus películas y difundiendo por todo el país ideas que sólo existen de una manera confusa en la conciencia popular. Sería ésta una de las mejores maneras de difundir la cultura en la masa analfabeta.

CAPÍTULO DUODÉCIMO.—REFORMA ESCOLAR—REFORMA EN LA ORGANIZACIÓN DE LAS ESCUELAS.

Al mismo tiempo que la organización del profesorado va dando sus frutos y la construcción escolar va mejorando el teatro de acción donde desarrollarán sus energías los nuevos elementos, se puede ir cambiando la organización escolar actual por otra más en armonía con las tendencias pedagógicas modernas y con las necesidades reales de la población.

Nuestra ley actual, no distingue entre la enseñanza de los habitantes de los campos y la de las ciudades: apenas si habla de la enseñanza predial o sea de las escuelas que deben fundar y sostener los propietarios de los grandes fundos rurales. Pero estas escuelas casi no se distinguen de las otras, como no sea por su mayor miseria y escasez. Necesitamos pues, crear la enseñanza rural, separándola de la enseñanza urbana y dotándola de los medios necesarios para crear hombres del campo, útiles y laboriosos.

Esta debería ser la primera división de las escuelas.

El tiempo de estudio variaría naturalmente, así como los programas de instrucción, tanto en las unas como en las otras y ojalá, a ejemplo de naciones como Noruega, llegásemos a crear una legislación especial para las escuelas rurales.

La ley actual divide la enseñanza en tres grados: inferior, o elemental media y superior, y señala seis años para la enseñanza primaria; de donde se deduce que a cada grado corresponden dos años de estudio; lo que en mi parecer es poco, debiendo ese tiempo elevarse a siete años, de los cuales: tres corresponderían al inferior y dos a cada uno de los otros.

Es de saber que la ley no habla de la enseñanza de párvulos ó de Jardines de infantes, aunque se trata de establecerla de una manera más extendida que lo que hasta hoy está.

La enseñanza rural por razones que son obvias y que por tanto no me detendré a detallar, sólo comprendería los dos grados inferiores o sea cinco años, como ciclo total.

La enseñanza rural se daría en los caseríos, fundos rústicos, y en las parroquias, cuya población escolar no alcanzara a ser suficiente para organizar una escuela graduada completa.

La enseñanza rural sería mixta, de preferencia, según el sistema suizo, es decir, que los niños y las niñas de 6 a 8 años recibirán la educación conjuntamente dirigidos por una maestra, en tanto que, los muchachos y las muchachas de 9 a 11 años, son enseñados por un profesor.

Si por razones especiales, esto no fuera posible, aunque tengo informes que ya se ha ensayado en algunos pueblos con buen resultado, la escuela rural mixta deberá ser la regla en los caseríos donde por punto general el número de niños no es muy grande. Un mismo profesor no deberá enseñar más de cuarenta alumnos como maximum. Toda escuela que tuviera un exceso de veinte niños sobre este número, tendrá, además de su director, un profesor auxiliar o ayudante, con el cual compartirá el primero la enseñanza y vigilancia de las clases, tocándole las inferiores al último.

En las ciudades y villas de importancia, donde la población es numerosa, se organizan escuelas graduadas completas, dotadas de un profesor por cada clase y siendo éstas en número de siete, y debiendo tener cada una entre treinta y cuarenta alumnos, cada escuela albergaría, de 210 a 280 alumnos. Si en las ciudades no hubiera el número de alumnos suficiente, para los últimos años o grados, la escuela sólo comprendería el grado elemental y el medio, y se denominaría: escuela media. Lo mismo podría hacerse en las cabeceras de cantón y villas de importancia.

Esta organización sería la misma para las escuelas de varones y para las de mujeres. Respecto a las escuelas ambulantes, sólo en las regiones muy poco pobladas y donde los caseríos no tuvieran una población suficiente, para mantener una escuela mixta, podría ensayarse a título excepcional, aunque a mi modo de ver daría mejores resultados, desde el punto de vista de la enseñanza agrícola práctica.

Actualmente existen en Guayaquil, algunas escuelas graduadas completas, en las cuales, además, se dan algunas clases de trabajos de aplicación, y de enseñanza profesional, como por ejemplo: la escuela de enfermeras, instalada en uno de los centros escolares municipales; pero al lado de estas escuelas, existen otras incompletas con un director y uno o dos ayudantes, lo que no permite que cada clase esté regida por un profesor como sucede en las escuelas graduadas. Estas escuelas debieran ser refundidas unas en otras hasta que todas tuvieran una organización uniforme, quedando entonces varias escuelas graduadas completas y el número de escuelas medias y elementales necesarias, para educar el exceso de alumnos de los primeros años. Cada vez que el número de éstos fuere muy grande en una escuela completa, se fundaría una escuela media o elemental, según el grado a que perteneciera el exceso de alumnos.

Las escuelas elementales serían regidas por profesores de tercera clase, las medias por profesores de segunda clase y las superiores y completas por profesores de primera clase, siendo lo mismo respecto de los grados; es decir, que los auxiliares del

grado inferior serían de tercera clase, los del grado medio, de segunda, etc. De esta manera la categoría del puesto estaría en relación con el sueldo y el grado de la enseñanza, así como con el tiempo de servicio de cada profesor. Excepcionalmente y por haberse conferido hasta hace algunos años, sin ton ni son a todo candidato el título de profesor de primera clase, se darán las clases de las escuelas medias, así como la dirección de éstas, a profesores de primera; pero procurando regularizar el servicio, de modo que éste quede en escalafón. En cuanto a la enseñanza técnica profesional y a la enseñanza especial, que generalmente se las incluye en la primaria, trataremos de ellas en capítulo aparte, pues merecen mención especial.

Pero haré también especial mención de una subdivisión de la enseñanza rural y es la que se refiere a la educación especial de la raza indígena.

En las altiplanicies y en los valles, que se extienden entre las dos cordilleras de los Andes ecuatorianos, existe una numerosa población de raza indígena pura, cuyo estado abyecto y miserable inspira la más viva compasión y el más grande cuidado, a todo el que con espíritu clarividente estudia el porvenir del país. Esta gran cantidad de población aborigen, que forma la tercera parte de la totalidad de los habitantes del Ecuador, vive en la ignorancia y el abandono, bajo el yugo de todas las tiranías, indiferente a todos los cambios y mutaciones políticas y como aletargada en su desarrollo, con las mismas opresiones que en la época colonial.

Los gobiernos republicanos nada han hecho por esos desgraciados parias, huérfanos de la civilización, para quienes los derechos y garantías constitucionales nada valen ni representan y que tampoco rinden al Estado y a la sociedad todo el valor de su trabajo y la energía que son capaces de desarrollar.

El problema del indio es uno de los más grandes y más difíciles que tiene que resolver la República del Ecuador. Esa raza tiene una psicología propia, distanciada de la civilización por dos o tres siglos de atraso y de ignorancia. Será preciso comenzar por levantar su estado intelectual y moral y será preciso comenzar a educarla con métodos y sistemas especiales, inculcándole en la escuela nociones que ya no es necesario enseñar a los habitantes del resto del país, más avanzados en la civilización.

Mucha, muchísima importancia da el autor de estas líneas a la educación de la raza indígena. Países como México, Estados Unidos y Bolivia, han abordado ya el problema en la forma que nosotros hemos propuesto.

Para empezar la tarea será preciso crear un profesorado especial, conocedor del idíoma quechua y de la psicología especial del indio, educado expresamente para este trabajo. A fin de crear ese personal podrían enviarse dos alumnos varones y dos mujeres, salidos de los institutos normales, que estudiaran en los Estados Unidos la organización especial de las escuelas para la raza indígena, los que después de adiestrarse convenientemente, podrían venir a dirigir los cursos para maestros que se crearían en los institutos normales nacionales.

Se concedería a estos maestros, que indudablemente tendrían una labor más penosa, algunas ventajas en su carrera, tales como: la disminución del número de años de jubilación, la concesión de una extensión de terreno en la circunscripción donde enseñaran, después de haber cumplido 10 años de servicio o cualquiera otra que pudiera halagar a los que se ocuparan de esta tarea.

El día que la raza indígena llegue a ser educada, la República incorporará 750,000 ciudadanos que hoy viven como siervos del terruño, para escarnio de la constitución y de sus leyes liberales.

Además, hasta aquí sólo nos hemos preocupado de la enseñanza urbana o mejor dicho, hemos organizado bajo un solo tipo y con iguales métodos y programas las escuelas de la ciudad y del campo. Es preciso reaccionar y educar a cada cual conforme al ambiente en que vive y en el que habrá de desarrollarse; por eso debemos cambiar la orientación que hasta aquí hemos seguido y en vez de los métodos y prácticas rutinarias que hemos venido empleando debemos buscar otros que den a nuestra juventud una educación más amplia y más conforme con las necesidades de la vida real.

No hay para que decir que los programas y métodos de estas escuelas tendrían que ser especiales, adaptadas a las actuales condiciones de los educandos.

Se notará que doy en estas líneas una gran importancia a la educación de la clase rural, porque, convencido de que el porvenir del país se halla en su agricultura, sé bien que educando a los campesinos es como mejor podrá inculcarse los progresos de ella a los productores de la energía y la vitalidad nacionales. Mas esto no quiere decir, que yo le dé mayor importancia que a la enseñanza urbana, porque como muy bien ha dicho un célebre escritor; si dejáis sin educar a un hombre del campo, tendréis lo que debéis tener, es decir, un campesino, porque el tiene delante de sí, un gran maestro que es la naturaleza; pero dejad sin educar a un hombre de la ciudad, y en el ambiente de las calles donde tendrá por maestro al vicio, haréis de él un criminal. Como ante todo la enseñanza debe ser integral y por tanto eminentemente objetiva, en sus medios y en sus fines, no ha de tender solamente a desarrollar el espíritu del niño, sino también a procurar el perfecto desenvolvimiento de las facultades físicas y corporales, inculcándole prácticamente las nociones de higiene y aseo personal, que tan necesarias son en la vida para conservar una buena salud, cultivando en él la afición a la gimnasia como un medio de equilibrar el esfuerzo cerebral y desarrollar las fuerzas físicas, evitando el ocio y la molicie, despertando en el deporte y los juegos al aire libre, las tendencias e iniciativas personales, y educando y afinando sus sentimientos y sentidos por medio de las excursiones escolares. En estos últimos tiempos, parece que cierta parte del profesorado se hubiera inclinado bajo las influencias de las ideas pedagógicas alemanas a esta clase de enseñanza al aire libre: yo preferiría a las excursiones escolares, la Institución del "Boy Scouting," que me parece más práctica, más efectiva, más intensa y de resultados más eficientes; pero sobre todo más adaptada a nuestras necesidades y a nuestro temperamento.

Se dirá que yo deseo una educación a la inglesa, dando predominancia a la enseñanza y educación del carácter y de las facultades, antes que a la instrucción: nada de eso, pero si hago hincapié en estos últimos puntos y es que ellos han sido más descuidados hasta aquí y se han supeditado a las enseñanzas teóricas y a los conocimientos dogmáticos. Mas si hablo de enseñanza integral, no ha de ser para dar la preferencia a una u otra forma de educar el espíritu sobre el cuerpo o el cuerpo sobre el espíritu, sino todas y cada una de las facultades físicas y corporales. Porque la enseñanza primaria es ante todo, como dice Bertrand, una preparación general para la vida, sin que en ella se perfeccionen o estimulen determinadas facultades, que a la edad en que los educandos la reciben, aún no se precisan de una manera clara y determinada.

Algunas instituciones escolares adicionales, completarán la enseñanza y mejorarán las condiciones de vida de los alumnos entre éstas una de las más urgentemente necesarias es la de las Colonias Escolares en las grandes ciudades, como Quito y Guayaquil, su institución se hace necesaria para salvar la vida de muchos pobres niños anémicos o raquíuticos, sobre todo en la época de la mala estación, dando a los unos y a los otros curas de aire, de luz y de sol. Su establecimiento es fácil y sólo se necesita un esfuerzo para lograrlo. Acerca de ello he hablado con detenimiento en la prensa diaria y no me detendré aquí a hacer una exposición completa de un plan económico para su sostenimiento. Queda por estudiar la cuestión de los niños anormales; pero ésto sólo podrá ser hecho con detenimiento, cuando una inspección bien organizada nos demuestre y designe el número de alumnos anormales o atrasados que hay en nuestras escuelas, distinguiendo los fisiológicamente retrasados o anormales, de los pedagógicamente retrasados.

El establecimiento de esta inspección higiénica, otra de las instituciones accesorias de la enseñanza más útiles y necesarias, debe hacerse lo más prontamente posible y darle la mayor amplitud y la más grande cabida dentro del régimen y la administración de las escuelas. El papel del médico en la educación es muy grande: no solamente en la formación de programas, en la edificación escolar, en la adopción del

material y en la formación de los horarios, ha de tomar parte como conocedor de la fisiología de los alumnos y de las reglas higiénicas que preceden al desarrollo de los niños, sino también en todo lo relativo a la vida interna de las escuelas. Actualmente, y esto lo digo porque lo sé de buena tinta, una gran cantidad de maestros de escuela adolecen de enfermedades, tales como la tuberculosis, lo cual es incompatible con el ejercicio profesional. Asimismo los niños no son examinados al entrar en las escuelas y les es suficiente presentar un certificado de buena salud, conseguido de cualquier modo.

La vacunación y revacunación que no debe ser descuidada, la elección de alumnos para las colonias escolares, las conferencias contra el alcoholismo y sobre puericultura e higiene sexual; todo esto debe estar encomendado al médico y por tanto, es necesario que junto a cada director de estudios haya una Inspección médica de las escuelas, con todo su tren de empleados para llenar su misión.

Últimamente se ha tratado de implantar comedores escolares en algunas escuelas; no creo yo urgente ni necesaria tal institución, porque entre nosotros no existen o apenas son sensibles, las causas que ha motivado el establecimiento de tales comedores escolares, en otros países. Ni grandes distancias que recorrer, ni el frío y el hambre esperando a los niños al llegar a su triste hogar, ni gran número de niños abandonados, ninguno en fin de esos males sociales que se ha tratado de combatir con la cantina escolar.

He hablado anteriormente de la indiferencia con que entre nosotros han sido vistos los trabajos manuales, sobre todo en las escuelas de varones, ya se sabe que en las escuelas de niñas los tales trabajos manuales se han reducido, hasta últimamente, a la enseñanza de labores y bordados, de utilidad muy discutible; la costura, el tejido de sombreros y otras labores de empleo práctico se han comenzado a introducir en algunas escuelas de niñas de Quito y Guayaquil, en estos últimos años. La enseñanza de cocina se hace de una manera teórica que en realidad debe aprovechar poco a las alumnas.

Lo que se debería tender a instituir de una manera seria y concreta debería ser la llamada "Enseñanza de Amas de Casa" o sea la "Escuela Ménagère," que en Bélgica sobre todo, está tan perfectamente bien establecida, combinándola con la de la higiene y la economía doméstica.

En lo que respecta a las escuelas de hombres, la utilidad de los trabajos manuales ha sido y sigue siendo muy discutida y en muchos países se les ha abandonado, sustituyéndolos por trabajos de verdadera aplicación, que se ha creído de uso más práctico y quitando toda importancia educativa al trabajo manual preparatorio.

Sería, sin embargo, bastante difícil establecer en las escuelas primarias pequeños talleres pues su costo de instalación y su funcionamiento, representarían un fuerte recargo en el presupuesto que no podría ser equilibrado con las obras que produjeran. No obstante, en la escuela que fuera posible, sería conveniente establecer cursos manuales de aplicación, utilizando los recursos que más a mano se tuvieran. En realidad la enseñanza de trabajos manuales es mucho más fácil de establecer y mucho más útil en las escuelas de mujeres, que en la de hombres. Dejo para más tarde cuando hable de la enseñanza secundaria y de la enseñanza profesional, el insistir acerca de este interesante asunto.

CAPÍTULO DÉCIMOTERCIO.—REFORMA ESCOLAR—REFORMA EN LA ORGANIZACIÓN DE LAS ESCUELAS.

En nuestras actuales escuelas, a lo menos así lo dice la ley, aunque en la práctica esto sólo sea un poco nominal, están prohibidos los castigos corporales. Las ideas de Herbard en Pedagogía están muy en boga y Herbard se muestra partidario en ocasiones del castigo corporal; pero en realidad en nuestras costumbres, este sistema es perjudicial, cruel y reaccionario. Así yo aplaudo y creo realmente es un progreso la supresión del castigo corporal. Pero no puedo menos de negar que no deja de haber

espíritus rebeldes e indóciles, que sea por tendencia ancestral, sea por ciertas predisposiciones orgánicas, es necesario considerar como pedagógicamente anormales. Para estos niños rebeldes es preciso observar un régimen especial distinto al de las demás escuelas.

En Suiza a los niños que han incurrido en faltas que el reglamento considera como graves, no se les separa y expulsa de las escuelas dejándolos sin educación, para que más tarde constituyan un peligro para la sociedad, sino que el Estado los recluye en escuelas especiales, a su propia costa, si son pobres y a la de sus padres, si éstos poseen recursos. Me parece conveniente intentar la organización de algunas escuelas de esta clase dentro del territorio de la República, en vez de remitir los niños, como hay costumbre de hacerlo, a los buques de guerra o a los cuarteles, cuyo régimen disciplinario y la promiscuidad con hombres de todas clases, constituyen un ambiente el más a propósito, para acabar de perder los pocos buenos sentimientos que aún quedaran en ellos.

Hora es de hablar de los premios y de los estímulos de que tanto se usa y abusa en nuestras actuales escuelas. La mejor manera de fomentar la vanidad natural, la quisquillosidad propia de nuestro carácter y de desterrar de él la noción del cumplimiento del deber, sin hacer consistir en ésto un mérito extraordinario, es premiar a los niños a cada paso y por cada examen, despertando en ellos emulaciones y envidias, más que estimulando aptitudes que no necesitan para desarrollarse el incitante de una pomposa condecoración o de un libro banal, y soeo o de un juguete que les concita, por lo menos la displicencia de sus camaradas. Puede el estímulo venir de otras mil maneras; pero es de práctica escolástica y anticuada, esos repartos de premios que han constituido durante largo tiempo la más grande preocupación de los maestros y padres de familia:

Muy racionalmente en su última Memoria al Congreso de 1913, el Ministro de Instrucción Pública propone la sustitución de los exámenes actuales, en los que no se toma en cuenta el promedio de las notas obtenidas diariamente y sumadas al fin de cada mes y luego su resumen total al fin del año, tal como hoy se practica, aunque imperfectamente en la enseñanza secundaria. De esta manera se estaría más en lo justo, no apreciando el resultado de unos cuantos días de esfuerzos y de sobrecargo mental efectuado al fin del año, sino el conjunto de lo aprendido en el curso de las lecciones dadas y recibidas.

Voluntariamente, renuncio aquí a entrar en las cuestiones propias de la metodología general y especial, dejando sus detalles para los profesionales de la enseñanza, que pueden con mayor conocimiento de causa, hablar de métodos y sistemas pedagógicos y sacar las deducciones más convenientes. Así pues me limitaré a decir que en este punto tan importante y hoy tan descuidado, de la expedición de un buen plan de estudios y de la selección de un programa escolar, se tomen en cuenta, además de las nociones de la pedagogía moderna, las circunstancias especiales de nuestra raza, de nuestro clima y de nuestro estado actual de cultura, al mismo tiempo que el de los maestros de escuela, que aplicarán y pondrán en práctica los planes y programas que se expidan. Además, en el curso de los capítulos anteriores he hablado en diversas ocasiones de muchos asuntos que tienen relación con los planes y programas de enseñanza, y en ellas he expresado mi manera de pensar respecto a tales cuestiones.

Pero en lo que respecta al horario, sí haré una indicación, muy importante, ya que casi nunca se toma en cuenta la edad del alumno, para retenerlo en la escuela mayor o menor tiempo.

Es menester tener en cuenta la resistencia física de los niños y graduar el número de horas de estudio conforme a la edad y por consiguiente conforme al grado de enseñanza. Es verdad que por la negligencia en el cumplimiento de la ley de Enseñanza Obligatoria, en más de una ocasión, junto a alumnos de corta edad se hallan otros que debieran estar ya en un grado superior; pero estos alumnos entrarían en la categoría de los pedagógicamente retrasados y ya he hablado de la necesidad de crear escuelas o por lo menos clases para estos niños pedagógicamente retrasados.

Otra condición que han de llenar los horarios, es la de incluir descansos alternos con las horas de trabajo con el objeto de dar reposo al trabajo intelectual y evitar una larga permanencia en las aulas de las clases, dando un poco de agilidad y elasticidad al sistema muscular para combatir la rigidez y la inmovilidad a que están sujetos los niños durante las explicaciones del maestro.

Terminada la serie de grados de la enseñanza y habiendo aprobado el alumno todos ellos, recibirá un certificado de enseñanza primaria. La institución de este certificado de enseñanza primaria, que existe desde hace mucho tiempo en naciones pedagógicamente muy adelantadas, no es una formalidad trivial y puramente burocrática, sino que corresponde a una necesidad creada por el estricto engranaje que debe existir entre la enseñanza primaria y los demás ramos de la educación pública.

Sucede que actualmente la mayoría de los niños no terminan su instrucción primaria y con una preparación insuficiente, ingresan a la enseñanza secundaria. Por esta razón esta última en sus tres primeros años, no es sino la continuación de la escuela primaria, no ampliada en el círculo y en la extensión en que debía ser dada y por lo tanto, su espíritu se halla desvirtuado y su grande amplitud disminuida.

El certificado de estudios primarios debería ser, no solamente un documento indispensable para ingresar a la enseñanza secundaria, sino aún a la profesional y a la especial. Y más aún, como el mejor medio de combatir el analfabetismo y de asegurar en una República democrática la formación de buenos ciudadanos; debería llegar a ser aún uno de los requisitos exigidos para ejercer ciertas funciones cívicas, como por ejemplo el derecho de ser elector. En efecto, no solamente es necesario saber leer y escribir, tal como lo prescribe actualmente nuestra Constitución, para acreditar en cierto modo que es consciente de su propia opinión; sino poseer ciertos grados de cultura, que permita juzgar de los hombres y de las cosas públicas con algún acierto y rectitud de criterio.

En otros países se exige cierta renta como requisito para ser elector, pero la fortuna puede ser reservada a ciertos privilegiados, en tanto que la instrucción es dada gratuitamente por el Estado a todos los ciudadanos. La renta por otra parte, está sujeta a razones económicas y no acusa aptitudes intelectuales bien desarrolladas; en tanto que el certificado de enseñanza primaria prestaría la seguridad de que el que lo posee no procede a ciegas en sus decisiones.

Yo considero que a pesar de que el certificado de estudios o de enseñanza primaria, como quiera llamársele, puede ser concedido por el favoritismo y falseado así su objeto, escollo de que ninguna institución legal puede salvarse, mientras la moral pública no sea más estricta y las leyes más bien observadas y respetadas, debe instituirse como una sanción y como la base más segura para establecer en su verdadero objeto la enseñanza secundaria.

Cuando los ciudadanos vean que este documento les franquea el acceso a situaciones ventajosas y les facilita el uso de ciertos derechos, comprenderán la ventaja que les va en alcanzarlo y se esforzarán en obtenerlo, sirviéndoles de estímulo a la difusión de la enseñanza. No se diga que el pobre se vería imposibilitado de llegar a adquirir un diploma de enseñanza primaria, porque, en países donde la concurrencia a la vida es más difícil que entre nosotros y donde el régimen democrático se halla en mayor plentitud, se le ha establecido y se le conserva desde largos años.

Coronada la enseñanza primaria, el niño se hallaría en disposición sea de seguir la vida ordinaria ingresando en cualquier profesión, sea continuando sus estudios en las escuelas superiores y si pertenece al sexo femenino, se hallará en disposición de saber cumplir los deberes que la sociedad le impone, llenando su papel de buenas madres de familia y de buenas esposas, merced a la educación recibida.

CAPÍTULO DÉCIMOCUARTO.—FINALIDAD DE LA INSTRUCCIÓN PRIMARIA EN EL ECUADOR—EL IDEAL EDUCATIVO.

Desde que Juan Jacobo Rousseau dió a luz su Emilio y en él sentó el principio de que la educación no debe ser otra cosa que el desarrollo de las tendencias naturales

del hombre, todos los filósofos y pedagogos modernos han basado en él sus teorías educativas, con mayores o menores restricciones. Pestalozzi, Froebel, Herbart, Herbert Spencer, Fichte, Augusto Comte, Ribot, todos, en sus obras convienen en que es necesario aprovecharse de las disposiciones naturales del hombre para imprimirle un carácter definitivo y orientar la educación que debe darle. Pero aparte de la educación individual y de las excepciones personales, es necesario que la educación pública tenga un carácter especial y definitivo que le fije un rumbo y la oriente hacia una finalidad determinada: en una palabra, es necesario que el Estado al convertirse en educador de sus ciudadanos, se proponga hacer de ellos, lo que, según un tipo tomado como modelo, deben ser para mejor provecho de la humanidad y del país que fué su cuna.

Así lo han comprendido todos los pueblos que pasan como modelo en la historia de la civilización. La Grecia antigua educaba a sus hijos en el cultivo del arte y de la estética y en el desarrollo equilibrado de las fuerzas psíquicas y corporales, lo que, según Thaine, produjo aquellos tipos de belleza, de sensualidad y de espiritualismo que se caracterizan en las esculturas de Fidias y Praxiteles.

La Roma guerrera y conquistadora, creaba sus hijos para soldados, fuertes, sobrios, resistentes y prestos al sacrificio y cuyos tipos más culminantes acaso los vemos en Escipión y Scévola. Fichte en su discurso a la nación alemana, trazó a sus conciudadanos la etapa que debían recorrer para crear aquella fuerza potente y opulenta, que es hoy la Alemania moderna. Todos los pueblos jóvenes o en estado de rejuvenecimiento; la Argentina, los Estados Unidos y el Japón, se esfuerzan en educar en sus escuelas a sus ciudadanos en el ideal del mayor engrandecimiento de la patria por el esfuerzo personal y colectivo de todos ellos. Así, pues, el Ecuador debe dar asimismo a su educación pública un objetivo determinado, de acuerdo con las conveniencias y necesidades de la nación y con las condiciones del medio ambiente y de la época en que habrán de desarrollarse las generaciones futuras. Estudiando nuestra historia, inspirándonos en ella y fijándonos en las causas que han dado origen a los errores que a cada paso su relato nos muestra, desentrañando por medio de su análisis los elementos psicológicos del pueblo ecuatoriano y por medio de su síntesis, su estado sociológico pasado y presente, podremos caer en la cuenta de que es aquello que nos ha sobrado o faltado, para tener el tipo de un buen ciudadano de un país democrático moderno y por consiguiente para poder orientar nuestra educación hacia un ideal de perfección que nos dé hombres y ciudadanos.

La psicología de los pueblos sudamericanos es, según todos los autores que se han ocupado de ella, casi la misma para todos los países que tuvieron un mismo origen. El insigne don José de Ingenieros le asigna las siguientes características: la pereza, la indolencia y la apatía, la vehemencia, la volubilidad, el orgullo y la falta de originalidad, características derivadas de la mezcla de las cualidades inherentes a las tres sangres que corren por nuestras venas: la india, la negra y la hispana.

La diferente proporción de esta mezcla de sangres imprime diversas modalidades al carácter de los pueblos hispano-americanos. Sin duda a esto lo mismo que a otras causas étnicas y geográficas, se debe la diferencia que se nota entre los habitantes de la Sierra y la Costa del Ecuador: aquéllos en su mayoría son mestizos de blanco y de indio, es decir, "cholos" como se les llama en Sud América; entre los de la Costa predomina el tipo mulato o sea la mezcla de negro y blanco; pero por lo demás las características originales no varían gran cosa. Indudablemente que a la indolencia y a la apatía se debe nuestro retraso en la vida progresiva de los pueblos; a la vehemencia, las veleidades de nuestra vida política, la facilidad de nuestros entusiasmos y la inconstancia en las empresas que requieren tenacidad; al orgullo, el desconocimiento que de nosotros mismos tenemos y a la falta de originalidad, debe atribuirse el que sólo seamos imitadores y el que las facultades inventivas aún no se hayan desarrollado entre nosotros.

La educación debe tender a corregir todos estos vicios, cultivando y educando precisamente las cualidades contrarias, es decir, la constancia, la energía, la iniciativa personal, el espíritu de empresa, el sentimiento del deber y de la obediencia, contrario a la rebeldía de nuestra raza y de su resistencia a cumplir las leyes prohibidas o coercitivas, y por último, como base esencial que desarrollaría el espíritu de solidaridad y crearía el valor cívico y la virtud ciudadana tan olvidada entre nosotros, el amor a la Patria y su bien y su felicidad como aspiración suprema de los asociados y por que en ella se halla vinculado el bien personal y particular de cada uno.

Tales deben ser las principales tendencias educativas y el objetivo inmediato sería lograr con su inculcación ciudadanos útiles y laboriosos, amantes del país y respetuosos de sus leyes e instituciones que llenarían al mismo tiempo su papel de buenos padres de familia y de hombres morales y amantes de la civilización y del progreso.

Para conseguir este objetivo, es necesario que los ejecutores del plan, es decir, los maestros de escuela, se hallen perfectamente asimilados con estas ideas y que emprendan su labor, comisión verdaderamente apostólica, y que para llevarla a cabo pongan al servicio de la idea original, todas sus energías y todas sus facultades de una manera consciente y bien dirigida.

La misión del profesorado será en este punto la más alta, la más importante función del Estado, puesto que está destinada a crear con los ciudadanos, la Patria del mañana y a modificar la marcha del país, imprimiendo honda modificación en su manera de ser social y política.

La creación de un tipo de ciudadano acomodado a las modalidades del carácter hispano-americano, la formación de una educación especial hispano-americana, será la obra lenta pero continua que los educadores de este continente deberán llevar a cabo para lograr el afianzamiento y la transformación evolutiva de las naciones de Sud América.

Claro está, que dadas las diferencias étnicas y psicológicas del pueblo hispano-americano con los pueblos europeos, muchas de las teorías pedagógicas de los más eminentes escritores, faltan o se desmienten parcialmente porque su aplicación no puede ser la misma ni puede llevarse a cabo por los mismos medios en esos pueblos cuya mentalidad difiere bastante de la de los nuestros según lo ha puesto de manifiesto Guillermo Terreno en su libro "De uno al otro mundo." Por lo mismo, para llevar a cabo esta obra del ideal educativo, para su concepción misma, para lograr su éxito será menester largo y paciente trabajo de estudio, y una voluntad y energía a toda prueba para llevarlo a la práctica. Pero cuando la educación haya llegado a modificar las ideas y barrer los prejuicios que hoy se aglomeran en el cerebro de nuestras clases sociales, cuando nuestra mentalidad haya levantado el grado medio de su nivel de cultura; cuando hayan dejado de existir diferencias de intelectualidad tan grandes como las que hoy existen entre los habitantes del Ecuador; cuando el analfabetismo se halle reducido de la cifra aterradora que hoy nos presenta; cuando, en fin, el país pueda llamarse con verdad país civilizado; entonces, descartados los defectos inherentes a la raza veremos con satisfacción y orgullo cambiarse la marcha del país y como en vez de ir sin orientación, marcharemos de un modo seguro camino del progreso.

Porque yo que tanto fío en la educación, que la creo panacea segura y bálsamo eficaz para lograr la regeneración social y política de la Patria, no me hago la ilusión de creer que sea ella sola la que pueda conseguirla. Precisamente la lectura del interesante folleto del Dr. Rafael H. Elizalde, Ministro de Relaciones Exteriores del Ecuador, titulado "Riqueza Obliga," segundo de su serie de intereses nacionales, me ha hecho cavilar más de una vez que la suerte futura de nuestro país se halla ligada a la resolución de problemas sociológicos mucho más hondos y complicados que a los que a primera vista se nos presenta, así como muy bien lo hace notar el Dr. Elizalde, la educación es un medio eficaz y seguro, si bien de resultados tardíos para lograr el afianza-

miento de la paz y el término de las revoluciones, pero su mejoramiento no podrá alcanzarse sino por el desarrollo de la riqueza pública que a su vez sólo se logrará mediante el afianzamiento de la paz. ¿Pero, cómo lograr esto, cómo alcanzar la moralidad política de las clases dirigentes, el amor al trabajo y el horror a la revuelta en la clase pobre, si uno y otro medio que se proponen como eficaces son tan contingentes?

La Argentina, país de clima templado, de producción exuberante, cuyo suelo fertilísimo atrae la inmigración culta y civilizada, halló en ella la sedación contra sus revoluciones hasta que Domingo Sarmiento echó las bases de su prosperidad y grandeza; Chile, en sus gobiernos enérgicos y fuertes y en el carácter emprendedor de sus hijos, que estrechados entre una alta montaña y un extenso océano han hecho tan próspera y floreciente la estrecha lengua de tierra en que viven; el Perú y Bolivia, quizás en el cansancio y el hastío; Colombia y Venezuela, en los agravios que naciones extranjeras más poderosas hicieran a su honor y soberanías nacionales; pero el Ecuador? * * * ¿Cuándo hallará el lenitivo para sus actuales dolores? ¿O es que como piensa Gustavo Le Bon hay en la vida de los pueblos un instante en que el instinto popular y el sentimiento nacional adormecidos se despiertan y de modo intuitivo cambian la marcha de los acontecimientos históricos? ¿Vendrá para nosotros ese momento de reflexión y será más poderoso que las pasiones exaltadas que hoy animan en el fondo del alma nacional? Yo quiero confiar en ello por que hay síntomas que hacen creer que el país, a pesar de su actual agitación, quiere entrar en una época de tranquilidad y sosiego muy favorables para su desarrollo y su prosperidad.

*Aprovechándose de este período tranquilo y sosegado, todas las iniciativas que hoy germinan pueden ser llevadas a la práctica y entonces el efecto de la educación se hará notar de un modo palpable y evidente. Será, aparte del programa del ideal educativo, la formación de ciudadanos virtuosos; pero con virtudes realmente objetivas que se basen en las tres nociones fundamentales comunes a todos los pueblos: Dios, el hombre, la Naturaleza. Se combatirán pues todos los vicios y tendencias que rebajen la dignidad humana y tiendan a destruir la naturaleza, se combatirá el alcoholismo porque está demostrado que es la escuela, la mejor cátedra para educar al hombre sobrio y temperante, se enseñará la higiene maternal y sexual como medio de prevenir la degeneración de la raza; se combatirán las demás plagas sociales con ideático objeto; se inculcará, como antes he dicho el amor a la Patria, el cariño por los niños y los débiles y el amor a los árboles, a lo útil, a lo bello, a lo agradable; la aversión por lo malo, lo nocivo, lo peligroso; la solidaridad y el mutuo apoyo sin perjudicar a la iniciativa personal como medio de fuerza y de grandeza y la práctica de la verdad y de la justicia sin rigores ni intemperancias, como medio de obtener la concordia de la humanidad tan necesaria para la vida.

Por medio de esta moral verdaderamente objetiva, se llegará al ideal del buen ciudadano adaptado a las condiciones y cualidades de nuestra raza y cuando hayamos logrado formar un pueblo de buenos ciudadanos, ¿podremos esperar que seremos un buen pueblo?

Viviendo en un país esencialmente democrático el espíritu de la enseñanza será asimismo ampliamente democrático. El mejoramiento moral y material de la escuela pública tendrá por objeto atraer a ella todos los elementos sociales reuniéndolos en un solo conjunto, dándoles una misma educación y borrando por medio de ella la diferencia creada por el alejamiento de las clases y por su desigual nivel de cultura.

Este será el mejor medio de combatir muchos de los prejuicios todavía existentes y acelerar la corriente de cohesión y concordia necesarios para la vida republicana.

CAPÍTULO DÉCIMOQUINTO.—LA ENSEÑANZA ESPECIAL Y LA ENSEÑANZA PROFESIONAL NO UNIVERSITARIA.

La instrucción profesional, entendiéndose como tal, la que prepara para las carreras artísticas, técnicas o industriales, distintas de las llamadas carreras liberales que se estudian en las universidades, se halla reducida en el Ecuador, al Conservatorio de

Música y a la Escuela de Bellas Artes establecidas en la Capital; a la Escuela de Agricultura de Ambato y a algunas escuelas de artes y oficios que funcionan de una manera rutinaria y primitiva.

Se ha hablado de fundar instituciones comerciales, y aún con el nombre de Colegio Mercantil llegó a funcionar en Bahía de Caraquez una escuela primaria con honores de escuela de comercio; pero sin que llenara su objeto, ni correspondiera a los fines para los que fué fundada. Este Colegio Mercantil ha sido transformado últimamente en Liceo de Segunda Enseñanza y ha tenido el honor de ser dirigido por el Prócer Liberal y antiguo Ministro de Instrucción Pública, don Miguel Valverde.

En la enseñanza profesional, que participa a la vez de la enseñanza primaria y de la enseñanza secundaria, distinguiré ante todo la enseñanza obrera. Cinco son los grados que se asignan a esta enseñanza: el primero, lo constituyen los trabajos manuales de las escuelas primarias; el segundo sería los trabajos manuales aplicados o sean las artes manuales, enseñadas en las escuelas primarias a título de cursos accesorios; el tercero estaría constituido por las escuelas de artes y oficios, verdaderos planteles para crear obreros, contra maestros, capataces, etc.; el cuarto lo constituirán los cursos nocturnos para adultos y el quinto la universidad popular, o sean las conferencias dadas por profesores y especialistas a los obreros ya educados y sobre asuntos relacionados con su profesión.

En nuestro país, aunque rudimentariamente existen establecidos el segundo, tercero y cuarto grados; tan sólo los hay en las ciudades principales.

Como antes he dicho, las escuelas de artes y oficios, eje principal de esta educación popular, se hallan en un estado de empirismo y de atraso lamentables, debido al descuido con que la mayoría de los Gobiernos las han mirado. La comunidad religiosa de los Salesianos fundó algunos de estos establecimientos hace ya más de 30 años, con apoyo del Gobierno que entonces regía el país y en su primera época precisa confesar que fueron muy bien atendidos y que su establecimiento produjo buenos resultados; pero posteriormente, sea porque los Gobiernos dejaron de fomentar estas escuelas, mas que por haber abandonado la dirección sus fundadores, han perdido toda eficacia y hoy languidecen habiéndose clausurado algunas de las establecidas.

La reorganización de esta clase de enseñanza se impone de modo que se ensanche su esfera de acción y que las artes manuales, técnicas o industriales que allí se enseñan, lo sean por los métodos más modernos y conforme con los actuales principios científicos que tengan relación con ellos. Precisa utilizarlas debidamente y traer un profesorado extranjero bien escogido, con el objeto de que la eficacia de la enseñanza tenga toda la efectividad posible.

Respecto al primero y segundo grados, hemos hablado ya suficientemente de ellos al tratar de las escuelas primarias.

Los cursos para adultos son fáciles de organizar porque no se necesita un local especial, pudiendo servir el de las escuelas primarias, ni tampoco profesorado pues mediante cierto sobre-sueldo, las clases teóricas pueden ser dictadas por los profesores de las mismas escuelas primarias.

En cuanto a las clases accesorias, que aquí serían las verdaderamente profesionales, tales como dibujo técnico, cursos de mecánica, etc., sí sería preciso que fueran dictadas por profesores especiales. En este ramo de instrucción pública tienen las municipalidades y las iniciativas particulares de las sociedades de obreros, ancho campo para laborar en favor de la clase trabajadora.

Sería ilusorio pensar por ahora en la Universidad Popular tal como se ha intentado crear en los Estados Unidos. Ni nuestras universidades y sus profesores, ni nuestros obreros están aún preparados para ello. He insinuado alguna vez que algunos de los profesores jóvenes y de los estudiantes universitarios ensayaran dar conferencias en los locales de las sociedades obreras; mas dudo mucho que mi insinuación sea tomada en cuenta y que esas conferencias tuvieran siquiera un mediocre resultado.

No terminaré sin hablar sobre la concesión de becas en el extranjero para los alumnos sobresalientes de las escuelas de artes y oficios, gracia de la que hoy no disfrutan. En el reglamento reformativo de becas que hoy rige, que fué insertado en la Memoria de Instrucción Pública de 1912, se incluye esta mejora; pero por desgracia, dicho reglamento no ha sido discutido hasta la fecha que escribo estas líneas.

He dicho que la enseñanza agrícola se halla reducida a la Escuela de Agricultura de Ambato, la cual tiene apenas un año de fundada y por lo mismo no puede decirse nada de ella por el corto tiempo que tiene de funcionamiento. Se halla además votada una ley del congreso creando una Escuela de Agricultura en Rocafuerte, Provincia de Manaví, y transformando asimismo en Escuela Agronómica el Colegio de Segunda Enseñanza, establecido en Babahoyo, Provincia de los Ríos; pero estas leyes aún no han sido llevadas a la práctica.

La misma suerte que el Colegio de Babahoyo debería correr el establecido en Machala con el nombre de "Nueve de Octubre," por ser mucho más útil a esa región esencialmente agrícola, la formación de buenos agricultores, en tanto que de los colegios de segunda enseñanza, apenas si salen unos cuantos bachilleres, mientras que la mayoría de los alumnos no terminan su educación y quedan sin profesión alguna y sólo con un barniz superficial de conocimientos generales.

Es verdaderamente inexplicable que los Gobiernos no se hayan preocupado de establecer la enseñanza agrícola, siendo como es el país esencialmente agricultor. La primera tentativa para establecer una escuela agronómica, de que tengo noticias, fué por iniciativa particular del señor D. Darío Morla, tentativa que desgraciadamente fracasó. El insigne patriota, don Luis Martínez, uno de los mejores Ministros de Instrucción Pública que ha tenido el Ecuador, echó las bases para la Quinta Agronómica de Ambato que desgraciadamente no pudo ver terminada y que como antes he dicho, funciona apenas desde hace un año.

Olvidaba entre las escuelas de esta clase en proyecto, la que, adjunta al Colegio Vicente Rocafuerte, se ha mandado fundar últimamente y para la cual se ha votado en el presupuesto de dicho colegio, la suma de 37,000 sucres. Lo que hace realizable la fundación de esta escuela es que el plantel mencionado dispone de extensos y bien surtidos laboratorios, museos y gabinetes de física, y que con la cantidad nombrada podría adquirirse un terreno para campo de experimentación, en las cercanías de la ciudad, en los cantones Yaguachi o Milagro a una hora por ferrocarril, a donde los alumnos podrían trasladarse fácilmente durante la época de las prácticas agrícolas.

Si el establecimiento de todas estas escuelas se llevara a la práctica, la Costa estaría así servida por cuatro escuelas agrícolas que se ocuparían especialmente de los cultivos tropicales.

Podría añadirse además la creación de una pequeña granja experimental en la villa de Daule, dedicada especialmente al cultivo de las frutas tropicales con la base de los impuestos que se han votado para establecer en esa villa una escuela de artes y oficios. Naturalmente, todas estas escuelas sólo darían grado de agricultor, o sea de administradores y directores de fincas y explotaciones agrícolas.

Dejaremos para más tarde el hablar de la enseñanza agrícola superior, o sea de la formación de ingenieros agrónomos.

Respecto a la enseñanza agrícola en la región alta, cuyo clima templado y cuyas producciones la asemejan a la de los países europeos, necesita, además de la Quinta Agronómica de Ambato, que principalmente se dedica a la arboricultura y a la viticultura, por ser esta la región del Ecuador más aparente para el cultivo de la viña y de los árboles frutales sería necesario crear en Quito, adjunta a la universidad, una escuela de agricultura y veterinaria que suplieran las necesidades de la agricultura en las tres Provincias del Norte y otra en iguales condiciones en Cuenca para las Provincias meridionales de la sierra. Naturalmente, que tanto estas, como las de la Costa, incluirían el estudio de zootecnia y de la veterinaria; pero en especial, las escuelas de Quito y Cuenca, por cuanto las Provincias en que están situadas se dedican a la cría de ganados, además de la agricultura.

Cuando las escuelas agrícolas comiencen a dar su fruto y cuando haya salido de ellas un buen número de alumnos, se podrá pensar en la generalización de la enseñanza agrícola, estableciéndola primero en las escuelas normales con el objeto de que los maestros generalicen los conocimientos más elementales en las escuelas primarias e inaugurando la enseñanza ambulante por medio de conferencias prácticas, dadas en las fincas y plantaciones o haciendas.

El país ganaría inmensamente, tanto en su cultura, como en el desarrollo de la industria agrícola, sustituyendo al estado de rutina y atraso en que actualmente se halla, la práctica de métodos y procedimientos de cultivo, de acuerdo con la ciencia moderna.

Los institutos comerciales de fundación oficial se hacen necesarios cuando menos en las ciudades de Quito y Guayaquil y en la de Bahía, puerto principal de la provincia de Manaví. Pudieran estar adjuntos a los colegios de segunda enseñanza de esos lugares; siempre que los cursos fueran dados de una manera paralela, pero independiente de los del bachillerato, ya establecidos.

El espíritu de esta enseñanza debería ser práctico y con arreglo a las condiciones actuales del país.

Como la industria aún no se ha desarrollado lo suficiente, no creo necesaria la fundación de escuelas técnicas especiales, pues los obreros que de ellas salieran no encontrarían ocupación y quedarían chasqueados o se verían condenados a emigrar en busca de trabajo. A medida que ciertas industrias prosperen y se desarrollen se podrá ir instalando en las escuelas de artes y oficios, cursos especiales para determinada industria, hasta llegar a transformar estas escuelas en establecimientos, a la manera de las "technical schools" que funcionan en Inglaterra y Alemania. Pero repito, que por hoy considero prematura la creación de escuelas industriales.

No pasaré por alto la enseñanza profesional de la mujer, para la cual ya se han comenzado a establecer escuelas especiales en Quito y Guayaquil. En Quito se ha fundado una escuela de "Artes Caseras," en Guayaquil, otra, por iniciativa particular, y la Municipalidad ha iniciado con buen éxito la fundación de cursos especiales. El Estado podría fomentar esta enseñanza, estableciendo además, de la enseñanza de amas de casa y de la de los trabajos manuales que se dan en las escuelas primarias, escuelas de artes de la mujer, en la cual ésta podría encontrar una profesión adaptada a su cultura y a su temperamento. Podrían darse en ella cursos de taquigrafía, mecanografía, telegrafía, fotografía, fotograbado y artes gráficas, tipografía y artes del género de corsetería, guantería y sombrerería, dibujo técnico e industrial, etc., siendo estas escuelas no solamente un semillero de buenas obreras, sino también, centro donde las mujeres de la clase media completarán su educación.

Tal sería a mi juicio la expansión que por ahora podrá darse a la enseñanza profesional en relación con nuestro grado de cultura agrícola, comercial e industrial.

CAPÍTULO DÉCIMOSEXTO.—LA ENSEÑANZA SECUNDARIA.

La enseñanza secundaria, en el Ecuador, lo mismo que la enseñanza primaria, adolece de deficiencias en cuanto a su organización, a su material, a los locales y al profesorado que la rige. Es verdad que casi todos los colegios de la República, que son en número de 12, uno en cada capital de Provincia, con excepción de las de Esmeraldas, Carchi y Los Ríos, disponen de locales más o menos adecuados; pero que si se la compara con los de las escuelas primarias, resultan muy superiores a los primeros, pues reúnen ciertas condiciones de comodidad, higiene y aseo siendo algunos como el Vicente Rocafuerte de Guayaquil, edificios que comparados con la generalidad de los nuestros, pueden calificarse de suntuosos. Mas séame permitido criticar aquí una tendencia muy generalizada y ya de difícil remedio, y es la de construir los locales de los colegios en el centro de las poblaciones, de modo que estos locales no tienen el inmenso beneficio que deberían tener, de estar rodeados de un extenso jardín y de una extensión poblada de árboles y provistos de grandes patios de recreo, beneficio

que tendrían si estuvieran situados en los extramuros o fuera del radio de las ciudades. Pero entre nosotros, poca importancia se ha dado al desarrollo físico de los estudiantes y se ha considerado como un grave inconveniente la gran extensión que éstos tendrían que recorrer para llegar al colegio, inconveniente que por lo demás, sólo sería de alguna magnitud en las ciudades de Guayaquil y Quito, pues las demás de la República son pequeñas poblaciones, en las que no se necesita recorrer grandes distancias para salir de su radio. El mal está hecho, y sólo hay que deplorarlo, porque, como antes he dicho, casi todos los colegios tienen locales ya construidos y sería inútil pensar en hacer otros nuevos.

Por lo demás, los edificios de los colegios adolecen de multitud de defectos pedagógicos en lo que se refiere a iluminación, ventilación y aereación de las aulas, en las cuales no se han tomado en cuenta muchas de las precripciones de la higiene escolar, sacrificándose éstas a la rutina en las formas de las construcciones.

El material escolar es tan rudimentario y antihigiénico como el de las escuelas primarias. Los mismos bancones de ocho plazas con asientos sin respaldo, las mismas pizarras barnizadas en brillante, los mismos libros de texto impresos en papel lustroso, los mismos cuadernos de escritura y en fin todos los defectos que ya hemos dejado anotados al hablar anteriormente de este asunto. El material científico es asimismo muy incompleto. Con excepción de los colegios de Quito y Guayaquil, que poseen un buen servicio de laboratorios y gabinetes de física e historia natural, los demás colegios apenas si disponen, cuál de un gabinete de física incompleto, cuál de un laboratorio de química descabado y mal provisto; pero ninguno dispone del total del material necesario para el aprendizaje científico. La renovación de este material se hace muy de tarde en tarde y su cuidado y conservación deja mucho que desear.

El material para el aprendizaje de las ciencias matemáticas así como el de la geografía y cosmografía, es de la misma manera, bastante incompleto y algunos establecimientos hasta carecen de él, estando en la mayoría reducido a unos cuantos mapas y globos geográficos y a unas cuantas figuras de talco o madera.

El profesorado en el cual hay profesores que dominan bastante bien las materias que enseñan y algunos de los cuales las conocen bastante a fondo para ser considerados como verdaderos especialistas, es en su mayor parte lo que podríamos llamar de ocasión. En efecto, la ley sólo exige para ser profesor de un colegio el grado de bachiller en filosofía, lo que haría suponer a este título el valor de un certificado de aptitud pedagógica, si bien en algunos casos se puede dispensar este título a los profesores. Ahora bien, lo que es más escaso entre los profesores de enseñanza secundaria es precisamente esta aptitud pedagógica, pues la mayoría y mejor dicho todos no han hecho estudios de esta clase, ni de su calidad de profesor, otra cosa, que un *modus vivendi* temporal. La ley manda sacar las cátedras a concurso pero por razones de orden puramente político y conveniencias partidaristas, las cátedras son dadas por interinidad por cuatro años, renovándose estos nombramientos con demasiada frecuencia a merced de los cambios políticos.

Las cátedras son dadas así como un favor o como una recompensa y si bien ciertos gobiernos procuran llevar a los colegios los profesores que se conceptúan más aptos para el desempeño de su cargo, en muchas ocasiones sólo el favor y las influencias personales, predominan en los nombramientos. Los profesores así nombrados carecen en muchas ocasiones hasta de conocimientos en la materia que enseñan y casi siempre de condiciones de educadores, ignorando los problemas y necesidades, las orientaciones y tendencias de la enseñanza y hasta la fisiología y etología de los alumnos. La mayoría se encuentra muy satisfecha con dictar pura y simplemente sus cursos, dándose por muy contentos cuando los alumnos han aprendido la demostración de los teoremas algebraicos contenidos en los programas o la descripción de un principio físico y del aparato que sirve para demostrarlo, es decir, que se atienden simplemente a la parte instructiva, pero descuidan completamente la parte educativa para

la cual no han recibido preparación alguna. Esta falta de aptitud pedagógica del profesorado de segunda enseñanza sólo sería susceptible de ser remediada por la garantía de la permanencia en los puestos adquiridos mediante concurso, en el cual los bachilleres o aspirantes a profesores demostrarán poseer no sólo los conocimientos de la ciencia que aspiran a enseñar, sino también, el de la metodología, es decir, que demostrarán, que además de conocerla sabrían enseñarla.

Se ha propuesto también, la creación de una escuela superior del profesorado, destinada a dar profesores a las escuelas normales y a los colegios de segunda enseñanza. Pero el concurso se demora indefinidamente, argumentando fútiles pretextos y sería preciso la enérgica y firme voluntad de un Ministro de Instrucción Pública, sordo a la voz de las conveniencias personales o partidaristas, para que se llevara a cabo esta mejora tan necesaria para la estabilidad del profesorado.

Por otra parte, la adjudicación de las cátedras, mediante un concurso, ha sido tildada de originar la desatención por parte de los profesores del estudio de las cuestiones nuevas en las ciencias que profesan, pues pasado algún tiempo, y teniendo la seguridad de no ser removidos de sus cátedras se atienen a sus conocimientos iniciales sin tratar de aumentarlos ni de ponerse al corriente de los progresos científicos que día a día se realizan. Esta acusación tendría sólo valor para los profesores que tomaran la enseñanza como una ocupación secundaria, pero un químico o un naturalista, que enseñara la ciencia que profesan, o un profesor titulado que enseñara cualquiera de las otras ramas del programa, cuidaría, si estima su reputación, de mantenerse en contacto con las nuevas adquisiciones de la ciencia. Con todo, si es verdad que en determinados casos, que al llegar al ocaso de la vida, se pierde el gusto y aun se toma horror a las novedades, se puede evitar este inconveniente, jubilando a los profesores completamente, después de haber cumplido treinta años en la enseñanza. Me refiero en ésto, no a la jubilación voluntaria, sino al retiro forzoso. Así no se tomarían profesores de más de 55 a 60 años de edad. Debo hacer notar que el actual profesorado está compuesto casi todo de jóvenes, algunos quizás demasiado jóvenes, para haber adquirido el completo desarrollo del aplomo y el dominio sobre sí mismo y sobre las materias que enseña que sería necesario para desempeñar el cargo de profesor. Pero ya he dicho que casi todo nuestro profesorado es de ocasión.

Los inconvenientes de la inamovilidad adquirida por el concurso pueden ser obviados no adjudicando las Cátedras sino por septenarios, es decir, sacándolas a concurso cada siete años; y el profesor que en tres concursos seguidos hubiera obtenido la Cátedra que desempeña sin interrupción, quedaría declarado poseedor de ella y no tendría necesidad de presentarse a más concursos. La necesidad de presentarse en concurso cada cierto tiempo, obligaría a los profesores a estudiar y mantenerse al corriente de los adelantos de su profesión.

Quedarían muchos puntos por resolver: la cuestión de los jurados, la de los temas, la de la forma de los concursos, pero éstas son cuestiones de pura reglamentación y que no constituirían una dificultad demasiado seria.

La renta de que gozan actualmente los profesores de enseñanza secundaria, es muy variable según el grado de importancia del colegio, el cual corresponde casi siempre al grado de riqueza de la provincia en que está situado. Propongo asimismo, la fijación de una renta mínima que sería la de 120 sucres en la Sierra y 150 en la costa con derecho a un aumento de 30% en cada siete años de servicio, con lo cual el profesor se podría jubilar con una suma doble de la que percibía al iniciar su carrera. Por punto general, la enseñanza secundaria, goza de mejores rentas que la enseñanza primaria; casi todos los colegios poseen bienes que les han sido legados, y gozan de impuestos provinciales para su sostenimiento, además de la cuota que se les fija en el presupuesto general de instrucción pública. Por desgracia no siempre hay buena administración de estos fondos y debido a ello, el material y los locales, se mantienen estacionarios, sin mejorarse, ni aumentarse.

La enseñanza secundaria, ha sufrido muchos cambios en lo que respecta a su programa y planes de enseñanza, desde hace 15 años; fué primero la supresión de la enseñanza de latín y de las raíces griegas, luego la disminución de un año de estudio, y por último, la reforma total de los programas, debida al Ministro señor don Luis Martínez, quien a la vez que suprimió un año en la duración total de los estudios, formuló un programa general por el sistema ciclo-concéntrico, programa que por haber parecido demasiado extenso, fué reformado un año después, sin más criterio que el de disminuir la extensión de los estudios, pero haciendo un reparto desigual de las materias estudiadas. Los programas actuales rigen desde 1906 y en ellos la preponderancia se da a los estudios de filosofía y matemáticas, pero sin un plan de orientación preconcebido, de manera que haga del bachillerato lo que debe ser, es decir, a la vez que una continuación de la enseñanza primaria, una preparación científica, moral y física para los jóvenes que quieran dedicarse a una carrera universitaria y una ampliación de la cultura general que desarrolle íntegramente en el adolescente, los gérmenes de educación que puso en el niño la instrucción primaria.

La transformación de nuestro bachillerato de enseñanza de humanidades y de filosofía, en enseñanza científica preparatoria, no ha originado en nuestro país grandes discusiones y se ha hecho a virtud de disposiciones meramente administrativas. Pero es que como hemos dicho más de una vez en estas líneas, nuestro profesorado no es pensante, o si piensa, se guarda muy bien de expresar su pensamiento, sin atreverse a manifestarlo. Las reformas pasan así sin discusión por parte de los encargados de ponerlas en práctica y la resistencia pasiva nulifica, casi siempre, los resultados buenos o malos, que podrían dar estas reformas.

Nuestro actual bachillerato, o sea la única enseñanza secundaria que se da en las escuelas, fué transformado hace tiempo, suprimiéndose las asignaturas de latín y griego y dándose en él la preferencia al estudio de las lenguas vivas; pero sin duda debido al mal método que se sigue en la enseñanza de éstas, es raro que un alumno salga de nuestros establecimientos de enseñanza secundaria, hablando otro idioma que el suyo propio, aún cuando a veces se ha intentado hacer que en los programas conste la enseñanza de cada uno de ellos, los siete años de duración que tiene el bachillerato.

Pero no es éste el principal escollo de la enseñanza secundaria, no es que haya en ella aglomeración o mala distribución de las materias enseñadas, sino que, como consecuencia lógica, de lo mal que se da entre nosotros la enseñanza primaria, los alumnos ingresan muy mal preparados, faltos de conocimientos y sin haber terminado dicha instrucción.

Los programas de ingreso a los colegios de enseñanza secundaria no existen, y los exámenes que se exigen para ingresar a un colegio no comprenden la totalidad ni la extensión de las materias de la Instrucción Primaria. La edad misma de los niños, casi no corresponde a la época en que ingresan a los colegios.

Como generalmente la escuela primaria es lo peor que hay en el Ecuador, los padres de familia de clase pobre o acomodada se apresuran a hacer ingresar a sus hijos en los colegios de segunda enseñanza que tienen ante sus ojos y antes los de los alumnos de mayor prestigio y que en realidad dan una enseñanza más amplia y más ordenada. Pero sucede que, faltos los educandos de la instrucción primaria se reducen las clases de gramática, geografía, aritmética e historia a la repetición, casi sin ampliación, de lo que se aprende en la escuela primaria.

La enseñanza secundaria debería ser la continuación de la enseñanza primaria, a la vez que la preparación científica, moral y física de los jóvenes, para su ingreso en las carreras universitarias o en las profesiones técnicas e industriales.

Pero para conseguir ésto, es necesario que el tiempo disponible no sea distraído en el aprendizaje de materias, que ya deberían conocerse, ni diluido en enseñanzas que han de ser superfluas al educando, para la carrera a la que se dedique.

Esto último que he dicho, no ataca a la integridad de la instrucción que el alumno ha de recibir en todo caso, conocimientos generales de literatura, filosofía y ciencias, cualquiera que sea la profesión a que se prepare, pero dadas en diferentes extensiones según sea la carrera universitaria para la cual se orienta.

Debería comprender pues, el bachillerato, dos vías distintas en la extensión de las materias estudiadas, el bachillerato en letras y filosofía y el bachillerato en ciencias, en vez del único diploma de bachiller que hoy se expide a todos los estudiantes. En el primero, se daría la preferencia en la extensión de los estudios de filosofía y literatura y serviría de preparación para ingresar a las facultades de derecho y de filosofía de las universidades; el segundo comprendería, de preferencia, las ciencias químicas físicas y naturales y las matemáticas, y comprendería la preparación necesaria para ingresar a las facultades de ciencias, medicina y farmacia. Aun podría comprender una segunda subdivisión en ciencias naturales, orientación especial para las carreras de medicina, farmacia, ingeniería agrícola, química o ingeniería química y doctorado en ciencias naturales y bachillerato en ciencias físicas y matemáticas, destinado a orientar hacia la escuela de ingeniería y hacia el doctorado en ciencias físicas. Por lo demás, siendo los estudios paralelos, los últimos podrían ser intercambiables, siempre que los alumnos rindieran las materias de preferencia, conforme a los programas establecidos; de modo que un bachiller en Filosofía y Letras podría tomar además el título en ciencias físicas y matemáticas, siempre que rindiera el examen correspondiente al exceso de extensión que en este último se diera al álgebra y a la geometría, etc., sobre lo que de estas materias se estudiara en el anterior.

Aparentemente, ésto complicaría el funcionamiento de los colegios de segunda enseñanza, exigiendo un aumento del profesorado y un mayor número de horas de clase; pero es necesario tener en cuenta, que nuestro actual bachillerato no corresponde a la extensión de esta clase de estudios en los colegios extranjeros. Así, alumnos salidos bachilleres de nuestros colegios, provistos de su título respectivo, no han podido ingresar directamente a las Universidades extranjeras, sin una preparación ampliatoria, y les ha sido al principio muy difícil seguir los cursos universitarios, por falta de una preparación suficiente, que estuviera en relación con la que, a la enseñanza científica se da en las universidades.

Al final de este capítulo, se encontrará un proyecto de programa para los tres cursos del bachillerato, el cual consulta las necesidades de la enseñanza secundaria, tal como la hemos bosquejado. Pero el escollo de la falta de preparación de los alumnos para ingresar a los colegios de segunda enseñanza, no estaría salvado sino con la adopción del título o certificado de enseñanza primaria y con el de programa de ingreso que correspondiera a la extensión total de las materias enseñadas en la instrucción primaria. Sin embargo, esta reforma, no surtiría sus efectos al comienzo, porque para ello sería necesario al mismo tiempo, que la enseñanza en la escuela primaria, aumentara su amplitud y mejorara a tal punto, que pusiera a los alumnos en condiciones de seguir los nuevos cursos del bachillerato, sin tener que repetir las materias ya aprendidas en ella. Y como sería ilusorio pensar en que esto pueda conseguirse desde el comienzo de la introducción de esta reforma y sólo se lograría al cabo de algunos años de haberse reformado la enseñanza primaria, sería necesario dejar a título de enseñanza preparatoria los dos primeros años de los seis que actualmente comprende el bachillerato, dedicándolos a la revisión de las materias primarias, lenguaje, aritmética, geografía, historia y las demás materias accesorias. En nuestros colegios ha existido esta enseñanza preparatoria, pero a la manera de una escuela primaria de segundo grado, pues en realidad los dos o tres primeros años de nuestro bachillerato, corresponden a los dos últimos de la enseñanza graduada.

Actualmente en la mayoría de nuestros colegios, esta enseñanza preparatoria ha sido suprimida, como si se supusiera que ya nuestras escuelas primarias dan alumnos suficientemente bien preparados para ingresar a la enseñanza secundaria.

Concebido así el bachillerato, ahorraría el establecimiento de la enseñanza científica, previa a la especialización profesional, que en las universidades francesas se conoce con el nombre de certificado de estudios de ciencias químicas, físicas y naturales que orienta hacia las carreras universitarias de ciencias aplicadas.

Pero acaso lo más difícil en la enseñanza secundaria sea el mantenimiento de la disciplina del régimen y del buen orden en los colegios. Están conformes casi todos los autores en asegurar que en la educación hay una parte verdaderamente mecánica que puede ser asimilada al adiestramiento en los animales, y que está constituida por una serie de actos mecánicos que en el niño imprimen cierto hábito y lo enseñan a cumplir ciertos actos, y a llenar ciertos deberes, de modo automático. Ahora bien, esta parte de adiestramiento en la educación, está muy mal conducida en la enseñanza primaria y si los niños vueltos adolescentes que ingresan a los colegios llevan multitud de costumbres refidas muchas veces con el buen sentido y la corrección social a más de falta de disciplina, que unidas a la natural travesura y turbulencias propias de la edad y agravadas quizá por la tendencia ancestral de la raza, hacen difícil mantener el buen orden en los colegios. Llegados a cierta época de la vida, los adolescentes, y y entre nosotros quizá de una manera prematura, empiezan a sentir el despertar de apetitos y pasiones en embrión y al mismo tiempo el desarrollo corporal y orgánico, exigiendo en ellos un mayor gasto de fuerzas, comunica a su sistema nervioso, un estado de tensión y de hiperexcitación que más de una vez se traduce por la pereza y el disgusto por los estudios, la impetuosidad, la tendencia a los actos violentos e irreflexivos, la altanería, la sensualidad, y la frivolidad en los gustos. Es que en esta época el adolescente tiene aún los sentidos del niño dentro de la armazón y de la estructura del hombre y en más de una ocasión, el desarrollo muscular y óseo no corresponde al desarrollo del sistema nervioso.

En tales condiciones y con tal estado fisiológico y psicológico, el adolescente mas aún que el niño necesita ser guiado por un educador hábil y enérgico que se preocupe de modelar su carácter en esta época de la vida, en que es necesario imprimir los más vigorosos trazos al modelado del ser psico-físico humano, corrigiendo por la educación las tendencias instintivas que dejadas a sí mismas y merced a las influencias del medio ambiente, se convertirían más tarde en vicios y pasiones y que bien conducidas pueden ser cualidades utilizables para el hombre de más tarde y para la sociedad en que viva. La violencia puede ser transformada en generosa acometividad; la altanería, en noble orgullo, la frivolidad y la ligereza en espiritualismo, en alegría y amenidad y así sucesivamente si se cuida de educar, al mismo tiempo que de instruir. Es éste un gran defecto de nuestra enseñanza pública, que ya he señalado en otra parte y es que no educa y apenas instruye. Por eso descuida a cada paso multitud de pequeños y de grandes detalles que influyen notablemente en la educación de los jóvenes. Débese esto, a que en la segunda enseñanza falta aún más que en la primera, toda noción pedagógica y apenas si, gracias al mayor grado de cultura de su profesorado, se suple esta falta con medidas tomadas de una manera intuitiva y por lo tanto empíricas.

La conservación del orden y disciplina en el interior de los planteles, debe ser, pues, cuestión de muchos factores: los conocimientos que sobre educación posean los directores y profesores de ellos, del estudio del carácter especial de los alumnos, del reparto de las horas de trabajo y recreo, y en general, de la utilización del tiempo y de la reglamentación interna; así como de la forma y del método con que se pongan en práctica las medidas tomadas para conservar el buen orden.

La enseñanza secundaria, ha sido hasta estos últimos tiempos aquella que de manera más preferente han atendido nuestros gobiernos y si su dirección, y organización no hubieran corrido las veleidades de nuestra política, quizás se hallaría hoy en un pié si no brillante, por lo menos aceptable y satisfactoria. Entregada durante largo tiempo a las Comunidades religiosas, sobre todo a los Jesuítas, ha conservado el sello del *ratio-studiorum* que presidía en tiempo de aquéllos y contra cuyas huellas luchan aún por abrirse paso las modernas ideas pedagógicas.

En estos últimos años, sin que pueda decirse que ha sido descuidada por cierto, se le ha tratado de posponer a la enseñanza primaria y aún de incluirla y dividirla entre éstas y las universidades. Esto no ha pasado de ser desde luego un alarde de reformismo avanzado y yo no le daría la menor importancia, si no fuera porque la idea ha sido lanzada y patrocinada por dos de los escritores que más se han ocupado de Instrucción Pública y ejercido altos cargos en este ramo, don Luis N. Dillon y don José A. Campos. Tal reforma, que no será puesta en práctica, hallaría una gran resistencia en todo el país y por lo demás hay multitud de razones de conveniencia pública y de carácter pedagógico que harían difícil su implantación, la cual no se ha hecho ni en los países más adelantados del Continente europeo, siendo sólo los Estados Unidos por lo excepcional de su organización social, la nación en que tal reforma rige, haciendo parte de la legislación escolar.

Si hoy mismo ya se lamenta el exceso de estudiantes en las Universidades y la aglomeración de profesionales que salen titulados de ellas ¿qué no sería si se suprimieran los estudios del bachillerato que sirve como de una valla y de un tamiz para depurar a los elementos que ingresan a las universidades? La falta de preparación en los alumnos sería entonces mucho mayor que lo que actualmente es, al ingresar en los cursos universitarios: no quiero hacerme la ilusión tan ficticia como engañosa, de que nuestras escuelas primarias van a dar dentro de pocos años alumnos tan bien preparados en las ciencias físicas y matemáticas que puedan abordar sin más requisitos, los estudios superiores y las aplicaciones especiales de esta ciencia. Y no quiero continuar haciendo objeciones a la idea de la supresión de la segunda enseñanza, porque, como ya antes he dicho, la creo irrealizable, por cuanto encontraría tanta oposición en el país que tal reforma se volvería imposible de implantar. Muchos otros puntos relacionados con la segunda enseñanza, dejo aún sin mencionar pues tendría para hacerlo que dar mucho mayor extensión a este trabajo.

CAPÍTULO DÉCIMO SÉPTIMO.—LA SEGUNDA ENSEÑANZA—LAS ESCUELAS DE LA VIDA PRÁCTICA.

Al lado de los colegios de segunda enseñanza que dan la educación clásica del bachillerato, deberíamos colocar otra para los jóvenes que no desean ingresar en la Universidad quisieran completar y perfeccionar su instrucción primaria, preparándose para la vida comercial, agrícola e industrial.

A tal fin, están destinadas las escuelas que con el título de escuelas prácticas o "Realschulen" funcionan en Alemania. De todas las instituciones pedagógicas alemanas, una de la más adaptable y digna de ser imitada es ésta de las "Realschulen."

Para su descripción, cedo la palabra al distinguido escritor don Aureliano Abenza, quien se expresa así de ellas en su libro "Como enseña Alemania;" antes de entrar en detalles acerca de las "Miltelschulen," que han tenido y continúan teniendo, no poca parte en la prosperidad de Alemania, por influir principalmente en la cultura de las clases baja y media, las más numerosas y hoy las más influyentes en todos los países, conviene plantear la cuestión siguiente. ¿Es ventajoso, sea para las familias, sea para la sociedad, abrir a la salida de la escuela primaria, elemental y superior, varias rutas paralelas, es decir, tener establecimientos especiales que preparen directamente para tal o cual carrera, para tal o cual función social, o bien es mejor, retardar el momento en el cual los alumnos, habiendo recorrido unido un cierto ciclo de estudios comunes, deberán separarse para recibir una enseñanza especial?

Esta cuestión fué resuelta en Alemania y otras naciones (Dinamarca, por ejemplo) en el sentido de la separación inmediata, o, para servirnos de una expresión más propia, de la bifurcación, estableciendo dos variedades de escuelas: las "Realschulen" y los "Gymnasium;" mientras que otros pueblos (los Estados Unidos entre ellos) la resolvieron en el sentido opuesto, adoptando un sistema graduado de estudios, destinado tanto a los jóvenes que aspiran a las profesiones liberales como a los que se preparan para ingresar en las carreras industriales y comerciales.

Las "Realschulen" (escuelas reales) cuyo nombre no indica muy claramente la naturaleza, a pesar de lo que antes decían los alemanes, dan una enseñanza secundaria especial, estando destinadas en un principio a los jóvenes que se preparaban a entrar en las profesiones comerciales e industriales, en ciertas ramas de la administración, o en las escuelas superiores que a la administración conducen.

Por el contrario, los gymnasium, semejantes o equivalentes a los liceos franceses o a los institutos españoles, son los establecimientos de la enseñanza secundaria clásica, que dan aptitud a los jóvenes para seguir los cursos públicos de los profesores de facultad, llamados "Gymnasiallehrer" y corresponden a las clases de "Humanidades" y a las clases superiores de los referidos liceos e institutos; es decir, que en ellos se hacen los estudios del bachillerato clásico (Gymnasialbildung).

Alemania como el resto de Europa, no conoció hasta el comienzo del siglo XIX, más que dos clases de establecimientos escolares: las escuelas primarias, abiertas a todo el mundo y dando una enseñanza elemental más o menos por extenso, y las escuelas latinas, dando acceso a las universidades y destinadas a los hijos de las clases superiores de la sociedad, en posesión de la riqueza y de la influencia, anexas a las profesiones liberales. La escuela latina de antaño, es el Gimnasio de hoy (Staatgymnasium).

Se debió comprender, sin embargo, pronto en Alemania que esta última enseñanza, o sea la escuela clásica, apropiada a las necesidades de una sociedad, en la cual la clase media no había adquirido la importancia que poco a poco le aseguraron los progresos del comercio y de la industria, no daba satisfacción a esa categoría numerosa de ciudadanos, que no encontraba en el estudio casi exclusivo de lenguas y literaturas antiguas una preparación suficiente a las diversas carreras profesionales, cuyo número e importancia aumentan de día en día.

Tales fueron las consideraciones que dieron origen a esta enseñanza media, designada bajo el nombre de real, porque el estudio preferente es el de las ciencias comprendidas en la voz genérica de *realien*, cuyo significado es realidades, ciencias exactas, conocimientos positivos, cosas de la Naturaleza. De este modo nacieron "Realschulen," centros docentes que substituyeron el estudio del griego y del latín por una enseñanza más apropiada a la vida práctica, es decir, más científica que literaria, y cuyo fin ha de ser, ejercitar en el niño o en el joven, las fuerzas físicas, tanto como las intelectuales. Estos establecimientos han sido desde su creación tan numerosos como las escuelas clásicas de enseñanza secundaria, y han contado casi igual número de alumnos.

Hemos dicho antes que Alemania no conoció hasta los comienzos del siglo XIX, más escuelas que las de primera enseñanza y las latinas, en el sentido de que hasta entonces no se afirmaron algunos intentos que hubo con anterioridad para crear las "Realschulen."

Al pedagogo Hecher, el mismo que redactó luego el "General Landschul-Reglement" (1763), fué debida la creación de una de las primeras escuelas de esta clase, instalada en Berlín en el año 1747. Su fin era reemplazar la enseñanza exclusiva de las palabras por la de las realidades, y que se destinaba a los jóvenes que no se proponían seguir los cursos de las Universidades. La orientación general de su método consistía en hacer descansar los conocimientos sobre el estudio de cosas naturales, modelos, planos, objetos útiles a la vida común. De aquí el nombre de escuelas reales. Esta reforma era toda una revolución. Como podrá suponerse, tuvo antes de ser adoptada, que vencer muchos obstáculos, encontrando de parte de los Gimnasios la más viva oposición; los profesores, temiendo ver disminuir el número de sus alumnos, declaraban enérgicamente que la nueva enseñanza destruía los estudios serios.

Las escuelas reales, fundadas durante el siglo XVIII, sucumbieron después de varios años de existencia. El "Philanthropium" que Basedow organizó en Dresde en 1774, y que no era más que una "Realschule," tampoco prosperó. Era al siglo

XIX, al que se le reservaba el triunfo de estas instituciones, como de tantas otras beneficiosas para la cultura y la prosperidad.

Los progresos de la ciencia y de la industria, que son la gloria del siglo XIX, acabaron por triunfar de los prejuicios que consideraba el estudio de las lenguas, y sobre todo, de las lenguas antiguas, como la condición esencial de toda buena educación. El Gobierno prusiano se ocupó seriamente en 1832 de la organización de la enseñanza intermedia (de la primaria ya se había ocupado en 1819), precisamente en el momento mismo en que Francia, quizá influida por el ejemplo alemán, ponía también a la orden del día la reforma de su enseñanza secundaria.

Girardin, en su obra "De l'instruction intermédiaire et de son état dans le midi de l'Allemagne," decía en 1835, recomendando para su país, las escuelas reales:

Desde la revolución francesa, una sociedad nueva ha nacido también; una sociedad comercial e industrial: esta sociedad, pide una educación apropiada a su espíritu . . . Hoy nos son precisos también, comerciantes, manufactureros, agricultores y nuestra educación no parece adecuada para hacerlos . . . Entre nosotros, todo el mundo es demócrata y nadie quiere ser del pueblo.

Y Girardin se alzaba contra la manía de todas las clases sociales de mandar sus hijos a los Liceos.

Pero Francia no marchaba en su progreso con pasos tan seguros como Alemania. Alemania obraba por evolución consciente, y Francia, procedía por los resultados de su revolución, que no son impulsos tan firmes, duraderos y constantes. Las revoluciones en los pueblos, son como el latigazo que se da a un caballo cansado; le hacen saltar en un arranque, y quizá el carruaje sale del atolladero, pero agotado el animal, cae en seguida en el desfallecimiento anterior.

Alemania no era, no es un pueblo arrebatado, que se deja llevar de las primeras impresiones que recibe. Por eso había estudiado los asuntos de la enseñanza, había hecho pruebas y tanteos, y cuando se comprobó el valimiento de las escuelas reales y el papel que estaban destinadas a realizar en la vida nueva que el estado tomaba, comenzó a crearlas para no suprimirlas jamás.

Numerosos establecimientos se levantaron en los diversos Estados germánicos, para responder a una necesidad que había llegado a ser general, y un Decreto del Gobierno de Prusia, con fecha de 6 de octubre de 1839, reconoció de un modo oficial esta nueva categoría de escuelas, adoptó el nombre bajo el cual habían sido hasta entonces designadas y se publicó la reglamentación de la enseñanza y de los exámenes.

Hubo una "Realschulen" que llamaron de primer orden, otras de segundo orden, y "Burgerschulen," superiores. (Una variedad de estas escuelas son las "Mittelschulen," de las cuales más adelante hemos de ocuparnos.) Actualmente, todas están refundidas en la "Oberrealschulen," que comprende los mismos cursos que el "Gymnasium," y con iguales edades para el ingreso y para la terminación de los estudios, o sea, desde los 11 a los 16 años de edad; es decir, que la "Oberrealschule" y el "Gymnasium" son establecimientos de enseñanza perfectamente paralelos, pero con finalidad distinta; predominando el carácter científico el primero, predominando el clásico literario el segundo.

Paralelo también a estos centros, hay otro para la mujer: el llamado "Hohe Frauenerschule."

Y más adelante añade: "Recordando lo dicho en el comienzo de este capítulo al hablar de las "Realschulen," de cuyo carácter y tendencias participan las "Mittelschulen," según también indicamos, me afirmo en mis opiniones anteriores. Para mí, la enseñanza real responde a las necesidades de la vida moderna, de dar una instrucción verdaderamente práctica a la juventud, separándola del camino tradicional de las profesiones en puridad literarias, para dirigirla hacia donde las tendencias positivistas de los tiempos actuales los llaman, pero hacia donde todavía no se deciden a ir los que allí debieran estar.

El Emperador Guillermo, hombre de su época, y que está dotado de un gran espíritu de observación, se expresó así en una ocasión solemne:

"Ante todo, yo quisiera advertir que aquí se trata exclusivamente de medidas técnicas y pedagógicas que vamos a tomar para educar a nuestra juventud, de manera que responda a las necesidades de la situación que ocupa la patria en el mundo, y también para ponerla a la altura de las luchas por la vida. Las escuelas (léase universidades) han cumplido lo sobrehumano y han producido, a mi placer, una muy grande sobreproducción de personas instruidas, más que la nación puede soportar y más que pueden soportar los mismos individuos.

En eso la frase del príncipe de Bismark, el proletariado de los bachilleres, que nosotros poseemos, es exacta. La mayor parte de los candidatos del hambre, principalmente los señores periodistas, son bachilleres fracasados (la palabra es dura); ees es un peligro para nosotros. Tal exceso, que ahora es ya demasiado grande, hace que nuestra patria se asemeje a un campo saturado de agua, que no puede soportar más el riego. Por ésto, es porque yo no autorizaré más la apertura de gimnasios, de los cuales no se me pueda demostrar enteramente la razón de ser y la necesidad. Tenemos ya bastantes."

Esta tendencia hacia lo utilitario, contra la cual es imposible alzarse por que es general y cada hombre es hombre de su tiempo, comenzó a manifestarse hace ya bastantes años. No es de ahora el escritor francés que dijo: "Dans la lutte établie entre la "Realschule" et le "gymnase," c'est le dernier qui perd chaque jour du terrain, par suite de la predominance croissante du point de vue utilitaire."

Por nuestra parte añadiremos por cuenta propia, que en el Ecuador, una vez terminados los estudios primarios, los padres de familia de clase pobre, pueblo o burguesía, que no quieren dedicar a sus hijos a ejercer un oficio manual, los matriculan en los colegios aún cuando no tengan intenciones de darles una carrera universitaria. Para que aprendan algo más . . . generalmente dicen. Muchos hijos de familias acomodadas que no tienen intenciones de ingresar a la Universidad, siguen los cursos de los colegios, que abandonan, lo mismo que los primeros, antes de terminar los estudios del Bachillerato, llevando por consiguiente, una educación incompleta e ignorando muchos conocimientos útiles en la vida práctica. En los colegios de segunda enseñanza se observa, que la mayor parte de los alumnos abandonaban los cursos al llegar al tercero o cuarto año, sobre todo si han empezado a seguirlos en una edad de 14 a 15 años, época en la cual el adolescente comienza a sentir ya los instintos y las tendencias del hombre.

En un curso en que comienzan generalmente 80 ó 100 alumnos, sólo terminan los estudios hasta obtener el título de bachiller 10 ó 12 de ellos. Los demás desertan poco a poco, sin obtener de sus años de estudios, otra cosa, que un barniz superficial de cultura. Resulta en muchas ocasiones, que el programa de los estudios del bachillerato, no se adapta a las tendencias mentales del alumno y que en más de una ocasión, un estudiante que se distingue en los estudios literarios puramente teóricos de literatura, historia o filosofía, se encuentra incapacitado para los estudios de matemáticas y ciencias exactas y vice versa; un buen alumno de matemáticas mira con despego los estudios literarios. Esto da origen a que, confundidos como se hallan unos y otros, por un fuerte acto de selección, triunfan sólo los que pueden estudiar el programa completo.

Se nos objetará, que nuestro actual bachillerato se acerca más a la "Realschulen" que al "Gimnasio" o liceo clásico, puesto que se han suprimido hace tiempo los estudios del griego y del latín; pero contestaremos que la escuela de la realidad y el colegio de segunda enseñanza, difieren no sólo en la preferencia que se da en la una al aprendizaje de las lenguas vivas y al de las ciencias exactas, sino también, en su finalidad y en su espíritu mismo. El alumno de la "Realschulen" sabe que no se prepara para ser doctor, médico, abogado o farmacéutico y que no va a pasar largos años en la universidad, para obtener un diploma, sino que al salir de la escuela podrá emplearse en una casa comercial o en una plantación agrícola o en una explotación industrial.

Los padres de familia que hacen seguir los cursos del Bachillerato, no resisten a la tentación de oírlos llamar doctor sin averiguar si el joven tiene o no aptitudes para la carrera que se le pretende hacer estudiar, ni si esta carrera podrá ser para él un medio de vivir decente y decoroso.

En cambio, en la escuela de la realidad, los jóvenes pobres, cuyos recursos no alcanzan para subvenir a los gastos de estudios de una carrera universitaria, encontrarían la cultura suficiente para que en la lucha por la vida, hallaran manera de hacerse una situación cómoda y holgada y los ricos que generalmente se creen dispensados de dar a sus hijos una educación profesional encontrarían planteles donde aquéllos podrían obtener una instrucción suficiente para poderse entregar por sí mismos al manejo de sus bienes y a la administración de sus propiedades, de una manera menos rutinaria y más inteligente de lo que generalmente lo hacen.

El mejor medio de descongestionar las universidades y de combatir el aflujo de alumnos que hacia ellas se nota, sería abrir esta nueva vía, que atraería a los jóvenes, pues sabiendo que a los 17 ó 18 años, podrían salir con suficiente cultura para poder ganarse la vida, preferirían ésto, a tener que pasar largos años estudiando carreras que día a día se vuelven menos remunerativas por exceso de personal.

Hago notar, eso sí, que yo no propongo la creación de las escuelas de la vida práctica en el Ecuador, sino cuando la enseñanza primaria se halle a una altura suficiente de progreso y de mejora de su estado actual, porque a ella deben subordinarse todos los demás ramos de la enseñanza por útiles y convenientes que parezcan las reformas que se quieran introducir.

CAPÍTULO DÉCIMO OCTAVO.—LA ENSEÑANZA SECUNDARIA.

OTROS ASPECTOS.

Hemos considerado en los capítulos anteriores, las dos ramas en que debería dividirse la enseñanza secundaria. En ella debieran estar incluidas asimismo las enseñanzas técnicas y profesionales, las de bellas artes y la de agricultura en su grado medio; pero es la costumbre, separar todas éstas en grupos aparte, dejando sólo con el nombre de instrucción secundaria, la enseñanza que se da a continuación de la primaria, ensanchándola y ampliándola, hasta preparar suficientemente a los alumnos para los estudios superiores.

El espíritu bajo el cual hemos comprendido la educación secundaria, es ampliamente democrático, tal como debe ser en un país que tiene una organización política como la nuestra y tal como quiere Bertrand que lo sea en una República.¹ Con semejante organización, no quedarían privados de estudios complementarios suficientemente elevados, los que por falta de recursos pecuniarios, no pudieran seguir los largos años de cursos de las Universidades. Es verdad que no serían doctores, médicos o abogados, sino agricultores, comerciantes o industriales, pero ¿quién ha dicho que el pueblo más culto es el que posee el mayor número de médicos o abogados? Lo que conviene es esparcir la cultura lo más extensamente que se pueda, distribuyéndola proporcionalmente a las necesidades del Estado y a la de cada uno de sus ciudadanos, y facilitando los medios para que todos puedan adquirirla y quedar en aptitudes de que mediante el esfuerzo propio, les permitan hacerse un sitio en la sociedad y llenar las funciones que les estén encomendadas.

Así, pues, bifurcando nuestra enseñanza secundaria, abrimos más ancho campo a las iniciativas de la juventud y la volvemos al camino más expedito para lograr la conquista del sitio que le estuviera reservado en el encaillado social. La actual enseñanza secundaria, es un bloque que no produce más que aspirantes a doctores y en el camino quedan rezagados todos los que fracasaron, y cuyo bagaje educativo nada sólido ni aprovechable, les sirve de muy poco para ganarse la vida.

¹ Bertrand, "Les études dans la démocratie."

Y como éste debe ser uno de los fines de la educación que a la vez debe desarrollar el corazón, el cerebro y el músculo, creo que la enseñanza secundaria hoy tan teórica, debe tender a facilitar el desarrollo de este último órgano, no sólo por el deporte y la gimnasia, sino también por el trabajo manual bien conducido.

Generalmente, en nuestros colegios de segunda enseñanza, los alumnos disponen al día de muchas horas libres que si no las pasan en el local por no obligárselo a ello el reglamento, la mayoría las emplean muy mal, en una época que los adolescentes que comienzan a sentir las excitaciones de apetitos nuevos, son víctimas propicias de todas las concupiscencias y de curiosidades que los llevan a situaciones que para ellos tienen el atractivo de lo desconocido y apenas sospechado. En cambio, cuando un Reglamento severo obliga a los jóvenes a permanecer largas horas dentro de un plantel, el tedio y el aburrimiento los invade y exalta su carácter turbulento y revoltoso. Añádase a esto, que como ya hemos dicho, la mayoría de los locales no dispone de patios y jardines de recreo, los educandos en su mayor parte están obligados a permanecer largas horas en las salas de estudio en posiciones incómodas por la mala construcción del mobiliario escolar, bajo un calor tórrido en la costa y bajo un frío glacial en la sierra. ¡Cuánto mejor sería, aprovechadas esas horas de vagancia, extravío o aburrimiento y de fastidio, si alternándolas con tiempos de descanso que podrían ser utilizados en juegos y recreos, se aprovecharan en dar a los jóvenes enseñanzas manuales aplicadas!

En algunos colegios existe una imprenta para su servicio: si al lado de este taller de tipografía se montaran otros de encuadernación, litografía y fotograbado, etc., y otros de carpintería y de herrería, siquiera en pequeña escala, los alumnos ocuparían útilmente una buena parte de su tiempo, retribuirían con su trabajo los gastos que hiciera el colegio en el montaje y sostenimiento de los talleres, aprenderían a ver con menos terror las artes mecánicas, adquirirían hábitos de laboriosidad y de trabajo, ejercitarían el músculo y fijarían las ideas de una manera ordenada y serena, hallando en la práctica la aplicación de muchos conocimientos generales por ellos aprendidos, y por último, se acostumbrarían a contemplar los resultados de un trabajo asociado y conjunto, viendo con el de cada uno el de todos los demás.

Los museos y laboratorios tampoco les debieran estar cerrados y en horas de trabajos prácticos; los alumnos podrían aumentar con sus preparaciones y con las muestras recogidas en excursiones anteriores, las colecciones de zoología, botánica y mineralogía o interesarse en los trabajos personales de sus profesores ayudándoles en operaciones secundarias que los amaestrarían en los ensayos y manipulaciones. Para todo ésto es preciso, que los alumnos se acostumbren a mirar con cariño y respeto el mobiliario del colegio. Es lamentable que hoy no se pueda entregar a los alumnos libros o aparatos, sin que los deterioren y aun destrocen por la falta de aprecio y de cuidado que por ellos tienen.

Es necesario inculcarles que esos libros y esos aparatos, son instrumentos de progreso, cuya conservación interesa a todos, y enseñarles a apreciar la responsabilidad que adquieren cuando se les confía uno de ellos. Por mucho que sea el número del personal de vigilancia de un colegio, mientras los alumnos no adquieran esta responsabilidad, no será posible poner a su disposición el material necesario para las enseñanzas prácticas.

En las relaciones de la enseñanza secundaria, entre los padres de los alumnos y los directores de colegios, existe actualmente un error, y es que los primeros se desentendían generalmente de la conducta escolar de sus hijos y con un cariño y una ternura mal entendidos hacen caso omiso de las faltas que éstos cometen y aun llegan a creerlos víctimas de la inquina de los profesores.

Descuidada la vigilancia del niño fuera de las horas de clase, éste dejado a su albedrío, cumple sus deberes escolares si es de natural estudioso y aplicado y se despreocupa de ellos, si es frívolo y no tiene gusto por el estudio. Antes que estos castigos humillantes o vejatorios que se imponen a los alumnos de los colegios, creo que se tendrían mejores resultados, si se obligara a los padres de familia a compartir con los

directores, la vigilancia de los alumnos en la parte que les estuviera encomendada; se nos dirá que en la vida moderna, los padres de familia, viven muy atareados para ocuparse de sus hijos, pero en nuestros hogares, hasta en los humildes de los obreros, la madre de familia todavía ocupa su lugar, y no hay educador alguno más hábil y más inteligente que una madre.

¿Es el bachillerato un verdadero tamiz para que a las universidades no pasen más que los alumnos que tengan la aplicación suficiente para seguir los cursos superiores? responderemos que no. ¿Por falta de rigor en los exámenes o en la extensión en los programas? Por una y otra causa. Los exámenes están sujetos a muchos convencionalismos. Actualmente sólo son orales, y cuantas quiebras pueden haber en ellos desde la pregunta que anticipadamente se ha hecho conocer al alumno, hasta el cambio de ella por otra más fácil, que el interrogado no responde a la primera, y la ayuda prestada en forma de indicaciones y circunloquios por el mismo examinador.

El Ministro Sr. Luis Martínez, que ha sido uno de los reformadores más inteligentes en esta materia, introdujo la mejora, después suprimida de los exámenes mixtos orales y escritos. Salvando todas las quiebras que en el mejor de los casos siempre tendrán los exámenes, soy partidario de esta forma, como la más equitativa. Para los exámenes orales, las preguntas o cuestiones del programa, escritas en papeletas y depositadas dentro de una ánfora cerrada, serían sacadas por el examinado.

Este tendría derecho a repetir el acto de sacar otra papeleta hasta tres veces si no se hallara en condiciones de responder a la pregunta escrita en la que sacó por primera vez. En la misma forma el alumno sacaría por suerte la cuestión o tema de su examen por escrito. Después de 10 ó 15 minutos concedidos para consultar libros en la biblioteca, el alumno sería conducido a una sala en la cual se dejaría durante un tiempo fijo y limitado para que pudiera desarrollar su tesis.

El asunto de las calificaciones siempre sería tan elástico; pero si se quisiera hacerlas más estrictas y justas, se podría obligar a los profesores a tomar en cuenta las notas obtenidas mensualmente por cada alumno, tal como lo determina el reglamento general de estudios, inserto en la Memoria de Instrucción Pública del año de 1913. Y esto que digo de los exámenes de bachillerato lo hago extensivo desde ahora a los licenciados y doctores en las universidades.

El defecto que se observa en los horarios de la instrucción primaria, y que ya hice notar anteriormente, es igualmente uno de los principales del horario de los colegios de enseñanza secundaria.

Los años inferiores que corresponden a los alumnos más jóvenes de menos desarrollo físico y mental, son sin embargo los más recargados y los que tienen mayor número de horas de estudio. La graduación debería ser a la inversa, es decir, que el número de horas de estudio debería aumentar conforme aumentara la edad de los educandos y por consiguiente, la graduación de las materias.

Esto sería lo más lógico y lo que estuviera más en concordancia con las leyes fisiológicas y psicológicas de la educación.

CAPÍTULO DÉCIMONONO.—LA ENSEÑANZA SUPERIOR—LAS UNIVERSIDADES EN EL ECUADOR.

La enseñanza universitaria fué, como ya vimos al principio de este libro, la primera en establecerse en el Ecuador, como escuela pública y es por consiguiente la más antigua, si bien no puede considerársela ni como la mejor dotada ni como la más perfecta. En efecto, actualmente peca de deficiente y rutinaria sin que su progreso haya correspondido a la marcha evolutiva del país y sin que haya influido de modo notable en su evolución tal como ha pasado en otros países, como Alemania y Francia, por ejemplo.

Las viejas facultades de filosofía y derecho, que con las de física y matemáticas, y más tarde la de medicina, forman la Universidad de Santo Tomás de Aquino, tienen sus representantes y sucesores en las actuales facultades de medicina, derecho y ciencias de la Universidad Central del Ecuador. Aun pasando por la larga serie de

vicisitudes la facultad de ciencias ha dejado de existir varias veces: el Presidente García Moreno denominando la "Escuela Politécnica," trayendo como profesores a ilustrados jesuitas alemanes y dotándola de laboratorios, gabinetes y museos, fundó en ella las enseñanzas de ingeniería civil y de farmacia. Con la ausencia de los profesores extranjeros languideció largos años y por último fué clausurada, hasta que bajo la égida del Ministro Don Luis Martínez fué reorganizada asimismo con una parte de su profesorado traido del extranjero. Mas en 10 años que lleva de fundada ¿cuántos son los profesionales que de ella han salido graduados? El Sr. Dr. Don Carlos Tobar Borjón en un interesante y bien meditado estudio titulado "La Reforma Universitaria en el Ecuador," emite respecto a ella muy interesantes conceptos, que más tarde tendremos ocasión de adoptar y reproducir: bástenos por ahora hacer constar que poco o nada ha progresado en este asunto nuestra Universidad Central si bien cuenta con un profesorado nacional, la mayor parte graduado en las universidades europeas y compuesto de jóvenes inteligentes, y que están próximos a llegar algunos profesores extranjeros para integrar su personal.

Se dice además, que se le va a dotar de un buen material de enseñanza y quizá de local propio y adaptado a sus necesidades.

Las Universidades de Guayaquil y Cuenca son de creación mucho más reciente, pues sólo datan desde 1895; antes de esa época sólo tenían la denominación de juntas universitarias y se hallaban bajo la dependencia del colegio de segunda enseñanza de la Provincia. En una y otra sólo existen facultades de derecho, de medicina y de farmacia, y aunque cuenta con profesorado competente y docto en sus respectivas materias, carecen casi por completo de material de enseñanza: laboratorios, museos, gabinetes, etc.

Sólo la Universidad Central se encuentra mejor a este respecto, pues cuenta con regulares laboratorios de química y bacteriología y un buen Museo de historia natural, así como un gabinete de física. En los tiempos del Presidente García Moreno, fué instalada con verdadera suntuosidad y los laboratorios de hoy son rezagos más o menos remozados de los que entonces existieron.

El Ministro Don Luis N. Dillon, que indudablemente ha sido uno de los reformistas más atrevidos que ha tenido el Ecuador en las últimas épocas, si bien no pudo llevar a cabo sus proyectos de reforma por el corto espacio de tiempo que ejerció su cargo y por la oposición que esos proyectos suscitaron, comparando el número de nuestras Universidades con el de los habitantes del Ecuador, y proporcionalmente con el de las demás naciones, halla que el número de tres es excesivo y que por diluirse en ellas los esfuerzos de la nación ninguno de los tres establecimientos corresponden a su objeto. En realidad, sólo un espíritu provincialista, arraigado desde muy antiguo y que divide la Nación en tres regiones que corresponden a los tres departamentos en que primitivamente se dividía el Ecuador, hace desear a los habitantes de cada uno de ellos tener instituciones propias e independientes, pero calcadas las unas de las otras, ateniéndose en ésto más que a las necesidades de cada región, al prurito de imitación y al afán de igualar o sobrepajar a la Provincia vecina.

Así por ejemplo, la Universidad de Cuenca, tiene una facultad de leyes, otra de medicina y farmacia; ahora bien, la ciudad goza de uno de los climas más suaves e iguales y templados del Ecuador, siendo por consiguiente muy salubre, por lo que en su hospital apenas se aloja un término medio de cincuenta enfermos sobre una población de cuarenta mil habitantes. Los jóvenes estudiantes de medicina, apenas pues si tienen ocasión de hacer práctica hospitalaria imprescindible en esta carrera y añádase a ésto, que un mal entendido pudor y un prejuicio en los usos y costumbres, les impide hacer exámenes ginecológicos.

Si además se toma en cuenta la falta de Laboratorios¹ y de instrumentos para las enseñanzas quirúrgicas y anatómicas, se podrá darse cuenta de lo insuficientemente preparados que resultan los médicos que salen de esta universidad.

¹ La facultad de Cuenca ha adquirido últimamente un laboratorio de bacteriología.

La bondad del clima y pobreza del país, no dan ocupación al número total de estudiantes de la universidad y así ya provistos de su título de doctor, se les ve despararrarse por las demás Provincias, especialmente por las costaneras, luchando contra la diferencia del clima, de las ideas y de las costumbres y muchas veces en desventaja por causa de su insuficiente preparación profesional; aún la facultad de leyes, famosa por la nombradía de sus profesores, da un exceso de abogados que corren la misma suerte que los doctores en medicina. Y no he hablado todavía, de la junta universitaria de Loja, reducida a una facultad de derecho, con 47 alumnos. ¿Qué podrá pensarse de una provincia de 100,000 habitantes donde casi la totalidad de la juventud sigue la carrera de las leyes? Sólo unos pocos jóvenes, dejando el nativo terruño, van a las Universidades de Quito de Cuenca a estudiar medicina. ¡Y pensar que casi todos esos muchachos son hijos de propietarios agrícolas y que viven en una provincia esencialmente agrícola y quizás más tarde mineral. !

La Universidad del Azuay, antes que médicos y abogados, debería preparar ingenieros agrícolas, civiles y de minas; así, pues, respetando sólo por honor a la tradición la facultad de leyes, creo que debería suprimirse la de Medicina, así como la junta universitaria de Loja y fundar en cambio en Cuenca, una escuela de agricultura y veterinaria y otra de ingeniería civil y de minas, añadiendo a ésta el curso de topografía y agrimensura que se ha decretado establecer en el colegio de segunda enseñanza.

Y conste que sólo porque sé lo arraigado que están entre nosotros, los prejuicios provincialistas y porque sé el desamparo en que se consideraría la juventud de las provincias azuayas, no me muestro partidario de la reforma más radical: de la supresión total de la universidad y de su sustitución por escuelas técnicas profesionales.

Por lo que hace a Guayaquil, su facultad de medicina tiene la ventaja de ser la más apropiada en el Ecuador para el estudio de las enfermedades tropicales, propias de la zona cálida y baja de la costa: sus hospitales, regularmente montados, dan ocasión a sus alumnos de hacer mucha práctica; pero aún falta mucho en materia de enseñanza técnica y científica: sólo posee un laboratorio de bacteriología bastante bien dotado para el número de alumnos que a ella concurren; mas necesita surtirse de material para las enseñanzas anatómicas, laboratorios de química y fisiología, de anatomía patológica, de toxicología y medicina legal, museo de historia natural, etc., en una palabra, proveerse de material de enseñanza para que ésta sea dada en debida forma, y sobre todo, construir un local en lugar apropiado para llevar a cabo estas instalaciones. Por razón de su situación, la facultad de medicina de Guayaquil es insustituible; no así la facultad de leyes.

En las Provincias de la costa, invadidas por el exceso de abogados que dan las universidades serraniegas, hay plétora de ellos tanto como en toda la República.

Los males que de este exceso se derivan, han sido puestos de manifiesto por los altos magistrados de la Nación, clamando por su pronto remedio. Así pues, yo opino por la supresión de la facultad de leyes de Guayaquil y su sustitución por una escuela superior de agricultura y por una escuela de ingeniería. La Universidad de Guayaquil, podría comprender también una "Escuela Superior de Comercio y Navegación," y la creación de estos institutos, correspondería mejor a las necesidades de la región, que es agrícola industrial y comercial en grado mucho mayor que las demás del país. La facilidad de comunicaciones, que poco a poco se mejoran, la bondad del clima y la mayor baratura de la vida, en la sierra harían posible que los jóvenes de la costa, que quisieran seguir la carrera del derecho, pudieran ingresar en las Universidades de Quito y Cuenca, sin mucho exceso de gastos y sin que representara ésto un sacrificio para los escasos de fortuna.

De propósito, he dejado para el final, hablar de la Universidad Central, la más importante del Ecuador, por su tradición y por su antigüedad.

La Universidad Central, sacudiendo su decaimiento ha mejorado mucho en sus últimos tiempos y se halla en camino de una mejora amplia y completa; ya hemos

hablado de las reformas que se piensan introducir en la facultad de ciencias, en lo que respecta al personal y al material, ya hemos dicho que posee buenos gabinetes y museos; pero su local, vetusto y arcaico caserón de la época colonial, resulta inadecuado para su objeto. La manía criticable en la edificación de las ciudades hispano-americanas de aglomerar en torno de la plaza principal los mejores edificios, ha vuelto muy central su ubicación; pero esto que parece una ventaja a los ojos de la mayoría, es al contrario un grave defecto, porque estrechado por todos lados no es posible pensar en un local así situado, en hacer nuevas instalaciones y en darle toda la amplitud requerida por las necesidades que diariamente se crean.

Existe el proyecto de vender el antiguo local, para con su producto comprar terrenos en los extramuros de la Capital y levantar un edificio de nueva planta. Pero por amor a la tradición, hay muchos que se oponen a este proyecto. De todos modos, si se quiere dar a la facultad de ciencias, la nueva organización que se proyecta, será menester edificar un local nuevo en un terreno más amplio, so pena de levantar un local especial para esta facultad, lo que me parece menos conveniente.

El profesorado de todas las universidades del Ecuador, tiene méritos indiscutibles: los jóvenes profesores vienen con nuevos bríos a reemplazar a las viejas lumbreras que alumbraron en su tiempo y que poco a poco van extinguiéndose. Si nuestras Universidades estuvieran mejor dotadas de material científico de investigación, no hay duda que la ciencia haría en nuestro país tantas adquisiciones como en cualquier otro.

Por lo que hace a la facultad de leyes y a la medicina de la Universidad Central, una y otra tienen tradiciones muy honrosas. La última, sin embargo se hallaba un tanto en retraso en los quince años anteriores, pero la renovación de su personal docente, con jóvenes médicos que han ido a las capitales europeas a perfeccionarse en los adelantos de su profesión, le ha dado nuevo impulso y sus cátedras en general están hoy bien servidas. He hablado de la reorganización de la facultad de ciencias e insistiré acerca de este punto en que las enseñanzas que allí deben darse deberán estar en relación con el estado actual del país y con el número de profesionales a que pueda dar ocupación. Es mucha verdad, que actualmente ocupamos un número relativamente crecido de ingenieros extranjeros en nuestras obras públicas y que muchas de las cátedras de las ciencias exactas han tenido o tienen necesidad de ser regentadas asimismo por extranjeros; pero indudablemente que pasada la época de la construcción de las obras públicas, hoy emprendidas, no habría en el país ocupación suficiente para un número regular de ingenieros, así como cubiertas las plazas del profesorado en colegios y universidades, sería difícil que un geólogo, un naturalista, hallara con su profesión una ocupación lucrativa.

La industria no se ha desarrollado aún en el Ecuador y por razones que no es del caso entrar a considerar aquí, tardará bastante tiempo, antes de que pueda serlo. Por lo mismo, un número considerable de químicos y de ingenieros químicos no hallaría ocupación en el país, aun suponiendo que las Municipalidades de la República o por lo menos de las capitales de Provincias, crearan laboratorios municipales y que otras Instituciones hicieran lo mismo y que las plazas de profesores en los colegios y universidades se llenaran todas con alumnos salidos de una facultad de ciencias. Por estas razones, opino que la matrícula de esta facultad debe ser limitada a un número de plazas que no sobrepase las necesidades del país.

Se me dirá que esta precaución es inútil, porque actualmente sea por la corta extensión de la enseñanza científica, sea por el poco aprecio que se tiene a los títulos de ingeniero y doctor en ciencias, obtenidos dentro del país, sea en fin porque los jóvenes desconfían de hallar ocupación al salir con un título semejante, el caso es que la facultad de ciencias, es la menos concurrida, no pasando de 25 a 30 el número de sus alumnos. Pero habrá que tener en cuenta la atracción que se producirá cuando la facultad de ciencias mejore su personal, aumentándolo con algunos profesores

extranjeros, así como su material, si se emplean las cantidades dedicadas para ello en el presupuesto, sobre todo dada la aglomeración de alumnos, hacia las demás profesiones, las que por consiguiente día a día se vuelven menos remunerativas.

En mi opinión, deberían crearse los siguientes títulos, correspondiendo cada uno a un programa especial de estudios: doctorados en ciencias físicas y naturales, en ciencias físicas y matemáticas y en ciencias físicas y químicas, ingeniería civil de minas, eléctrica y mecánica, ingeniero químico y químico analítico. Estas enseñanzas, podrían ser dictadas de una manera paralela y en los mismos laboratorios, por los mismos profesores, tal como se acostumbra en otras universidades. Por ejemplo: en el curso de química analítica no hay inconveniente en que un ingeniero de minas y un experto químico, trabajen juntos uno al lado del otro: bastará que en el programa se dé mayor extensión a aquellos puntos científicos, en que cada cual va a especializarse.

Así comprendida la enseñanza de la facultad de ciencias, llenará la función que está llamada a desempeñar en la cultura superior del país, sin recargar de una manera exagerada el presupuesto de gastos de la Nación.

Lo que es halagador en las universidades ecuatorianas, es el despertar que se advierte del espíritu universitario. En el seno de ellas, día a día se nota la tendencia de pensar y discurrir, la emulación de los actos nobles y levantados y el deseo de influir en la vida pública del país, viviendo no alejados de ella, sino asimilándose a sus manifestaciones y a su movimiento. Esto en un país en desarrollo, sobre todo si se trata de un país republicano y democrático, tiene una grande importancia si se considera que la clase universitaria es necesariamente la que en el porvenir dirige los destinos del país, y si la juventud comprende desde temprano, su papel y se prepara para llenarlo debidamente, se hallará sin duda en mejor estado para lograr su objeto.

Los varios Congresos de Estudiantes que se han verificado, han contribuído a despertar estos sentimientos y han hecho que en las Universidades resalten, cada vez más, las dotes del intelectualismo y de la cultura. Pero precisa que otro movimiento se produzca en ellos y este movimiento debería ser en favor de los estudios de investigación científica, de tal manera que las Universidades no sólomente fueran centros de aprendizaje profesional, sino también, focos de luz y de progreso, lugares donde el estudio y la observación trabajaran continuamente en solucionar nuestros problemas. Entonces dejarían de ser grandes caserones solitarios, la mayor parte del tiempo para convertirse en colmenas de hombres de ciencias. Un país pobre como el nuestro, no se halla en situación de sostener esos grandes institutos de estudios superiores, que sostienen los países ricos y fuertes; pero modestamente en el fondo de nuestras universidades, podremos contribuir a impulsar el progreso con estudios y descubrimientos, que serán para provecho nuestro. Así ligaremos la existencia de nuestras Universidades a la vida activa del país, devolviendo con creces, el sacrificio que hace por dar cultura superior a cierto número de sus hijos. Entonces podrá pensarse también, en la expansión universitaria y en la vulgarización de los estudios superiores, porque alumnos y profesores mejor preparados, podrían por medio de las conferencias, difundir esos conocimientos con mayor preparación y con mejor espíritu.

Lo que se opone desde luego a este impulso, es la falta de material científico de que tanto me he lamentado y luego la situación inestable de los profesores atendidos, como los de enseñanza secundaria, a nombramientos interinos, dados al antojo de las simpatías políticas. Para regular su situación, yo propondría un sistema de concursos en la misma forma de los que señalé para la enseñanza secundaria. La renta es asimismo escasa, a pesar de habérsela aumentado en las últimas épocas y para obligar a un profesional a que abandone su clientela, perdiendo con ello las perspectivas de fortuna y posición, es necesario resarcirlo con una cantidad proporcional o equivalente a la que deja de percibir. Mientras estas dos últimas condiciones, no se llenen, el profesorado tendrá épocas brillantes y épocas de decadencias, según sea la

calidad de los preferidos por las simpatías gubernativas y en general considerará la enseñanza como una ocupación pasajera y no como una situación estable y permanente.

Algo se ha hablado en los últimos tiempos de anatomía universitaria, lo mismo que de participación de los estudiantes en la administración de ella. Considerando muy maduramente el asunto en cuestión, creo que aparte de la libertad en la elección del profesorado y en la de la enseñanza, siempre que ésta no sea contraria a la moral o a la existencia del Estado y los vínculos sociales, creo que una separación absoluta de las Universidades, no es posible ni conveniente en el Ecuador.

Respecto al segundo asunto, mientras los estudiantes trataban de él, las juntas de profesores dictaban reglamentos restrictivos, en los que los alumnos quedaban sujetos a una severa disciplina y esto sin protesta de su parte.

Se verá, pues, que tales ideas no han arraigado aún y me parece prematuro pensar en que fueran realizables.

Sólo deben quedar como ideales acariciados, para un tiempo en el que la mentalidad y la cultura del país, hagan esperar que puedan ser puestas en práctica.

Las rentas universitarias, provienen del 20 por ciento de los derechos sobre exportación en las aduanas de la República y son insuficientes para dar la amplitud necesaria a la enseñanza universitaria. Las Universidades de Quito y Cuenca, poseen algunos bienes procedentes de legados particulares; pero aun en el Ecuador no se ha desarrollado la filantrópica costumbre de los acaudalados de otros países, de dotar munificamente los centros universitarios. Con todo, aunque yo desearía ver brillantemente establecidas las universidades en el Ecuador, hago notar que éstas, como todas las mejoras que he dejado apuntadas, deben subordinarse a la de la enseñanza primaria, base de la educación en todo país moderno.

Anotaré un asunto importante en lo que se refiere a los programas universitarios y es que convendría su unificación en las tres universidades para evitar que cuando tienen que trasladarse de una a otra los estudiantes sufran atrasos y perjuicios.

Con frecuencia estos programas han sido alterados y han sufrido reformas y modificaciones y no se llegará a una perfección relativa siendo mirados con criterio distinto en cada Universidad. La unificación de ellos, daría quizá lugar a una nueva reforma, pero con tal que se obtuviera una marcha metódica, se podría intentarla cohesionando las diversas tendencias de las tres Universidades.

Diría más acerca de ellas, pero acaso tendría necesidad para cada punto de extenderme en un capítulo especial: aquí sólo he intentado bosquejar lo que, a mi modo de ver, es más interesante para el porvenir de los centros de cultura superior en nuestro país. Séame permitido sin embargo, insistir acerca de un punto muy importante sobre la enseñanza técnica y práctica que deben ser dadas en los laboratorios. Casi siempre estos están en deficiente estado con aparatos incompletos o deteriorados y escasos de reactivos y de productos químicos. Cuando después de algunos años, a veces muchos se provee a los laboratorios de aparatos y reactivos, las Juntas Administrativas, olvidan fijar en los presupuestos anuales cierta cantidad, para renovar el material, o bien si dicha suma se fija no se invierte en tal objeto, el laboratorio va empobreciéndose día a día hasta llegar al extremo de que muchos análisis y trabajos prácticos, no pueden ser efectuados por falta del material y de los reactivos necesarios. Las rentas de las universidades, son escasas y no alcanzan para proveer de material, las más de las veces costoso a los laboratorios, con la prontitud necesaria.

Nuestras universidades tomando en cuenta el ejemplo de otras del extranjero, en que los alumnos gastan los reactivos y usan el material en provecho de su enseñanza, deberían establecer la costumbre de exigir a los alumnos una cuota proporcional al valor de los aparatos y reactivos que se les confía, cuota que sería devuelta a fin de año, descontando el costo de lo que hubiera deteriorado o gastado. Débese tomar en consideración, que el valor de las matrículas y derechos de exámenes es sumamente reducido, de tal manera, que los estudios universitarios, cuestan muy poco a los

alumnos y que la mayoría de éstos, en su condición de estudiantes, encuentran manera fácil de ganarse la vida, cosa que quizá ocurra en muy pocos países del mundo.

Dos palabras añadiré acerca de la cultura superior de la mujer. No quiero referirme a la presencia de éstas, en las universidades en ciertos cursos, como los obstétricos y de enfermeras, que se ha tratado de establecer en la Universidad de Guayaquil, sino a su participación en las demás carreras que hasta ahora sólo ejercitan los hombres. Adelantándose como sucede muy a menudo en nuestro estado actual de cultura, las leyes de instrucción pública, han tratado de dar a la mujer la mayor cantidad de facilidades para que pueda seguir las carreras universitarias, dispensándola para su obtención el diploma de bachiller y exigiéndola sólo el título fácilmente asequible de institutora. Desgraciadamente el ensayo no ha correspondido hasta aquí a la sin tenciones que guiaron a los legisladores: la mujer ecuatoriana, como en la mayor parte de los países latinoamericanos, aun de algunos que nos llevan cierta ventaja en el camino de la civilización, no tienen aún la educación intelectual y social necesaria para recibir una cultura superior y aún la sociedad misma, mira como raro y exótico el cultivo de las ciencias en las mujeres, concediéndolas como cosa más propia de su sexo el de las bellas artes y el de literatura.

Las mujeres que entre nosotros han alcanzado el título de doctor, no han llegado a ejercer la profesión contentándose con usarlo como un alarde de intelectualidad y una muestra de talento. Aunque en los países sajones y eslavos es tan importante la cultura femenina, por lo menos en Inglaterra, se ha llegado a dudar de la conveniencia de dar a la mujer una cultura superior, en vista del actual movimiento sufragista. Muchos escritores partidarios del feminismo, se declaran hoy desengañados de la educación superior de la mujer, que no alcanza a borrar las diferencias sentimentales de los sexos y que, al contrario, causando grandes perturbaciones en el orden social, han dado lugar a extravíos de criterios y a desviaciones en el papel que cada sexo está llamado a desempeñar.

Yo no creo que deba cerrarse a las mujeres el camino de las profesiones liberales; pero indudablemente que aún hace falta mucho para que aprendan a recorrerlo con facilidad. Mientras no hayamos perfeccionado la enseñanza primaria y profesional de la mujer, creo que es inútil pensar en darle una cultura superior que no se encuentra en estado de alcanzar.

CAPÍTULO VIGÉSIMO.—LAS BECAS—LA ENSEÑANZA EN EL EXTRANJERO—LOS VIAJES DE ESTUDIO.

Sumamente discutido y controvertido, ha sido el asunto relativo a la concesión de becas para efectuar estudios en el extranjero.

El Estado concede en el Ecuador dos clases de becas: las unas son una especie de auxilio que se da a los hijos de padres pobres para poder continuar sus estudios en determinados colegios y constituyen para esto una especie de subvención con la cual ayudan a su sostenimiento. Las otras se conceden para estudiar en el extranjero artes, industrias y ciencias practicadas en el país o para perfeccionarse en las ya existentes.

Lo que ha motivado los ataques y reproches que se dirigen a las becas es que los Gobiernos han hecho de ellas sinecuras y prebendas que en la mayor parte de los casos no se daban a los que más méritos tenían, sino a los hijos y parientes de los allegados a los hombres dirigentes de la política. En 1911, el Consejo de Estado suprimió 35 de las 70 becas que entonces existían; casi todos los jóvenes enviados habían perdido su tiempo sin dedicarse a cosa alguna de provecho y sin cumplir las condiciones de sus contratos.

Aun las becas que se daban a jóvenes talentosos e inteligentes, eran adjudicadas sin criterio alguno y a gusto sólo del aspirante que elegía a su arbitrio, la ciencia que quería estudiar.

Como las influencias eran las que determinaban la concesión de las becas, se pasaba por alto todas las faltas cometidas por éstos, sin que se ejerciera ningún control ni vigilancia serios. Por todas estas causas, además de que el espíritu de la envidia se cubre a veces con el manto del espíritu igualitario y reclama porque sólo unos pocos privilegiados vayan a los países extranjeros a estudiar a expensas de la Nación, han hecho que las becas sean muy combatidas y que los becados sean mirados en su mayor parte con prevención por la generalidad del público. Es preciso confesar, que muy pocos son los que han regresado con grado alcanzado en las universidades europeas o americanas; pero la mayor parte de esos graduados, desempeñan hoy con bastante eficiencia, puestos honrosos en los colegios e institutos científicos.

El personal médico de la Universidad Central, ha mejorado mucho, sobre todo, desde que está formado por un buen número de profesionales que se han ido a perfeccionar en el extranjero. Se dice generalmente, que con lo que se ha gastado en los becados en los últimos seis años y que se hace ascender a la suma de \$400,000 y con lo que se invierte actualmente, que alcanza a \$60,000 por año, podría haberse creado un gran instituto científico y traído un profesorado extranjero que hubiera educado gran número de alumnos. Indudablemente que tal criterio hubiera debido prevalecer en las regiones oficiales hace algunos años y hubiéramos obtenido con ello gran beneficio. Pero el deseo de formar por una parte profesorado netamente nacional y por otra, la necesidad que en todo caso habría aún cuando tuviéramos institutos tan buenos como los de otros países de Sud América, de perfeccionar los conocimientos de los alumnos, haría siempre necesaria la concesión de becas en el extranjero.

Hay que considerar que por perfectos que fueran nuestros establecimientos y por completa que fuera la enseñanza que se diera en ellos, siempre se obtendría gran ventaja con el cambio de ambiente y con la comparación que se hace entre los métodos observados en nuestro país y los que se siguen en el extranjero. Además, hay artes e industrias que por su extensión limitada, no podrán enseñarse en escuelas creadas especialmente para ello; pero que sin embargo podrían ser útilmente practicadas por un corto número de especialistas. Por ejemplo: para la ejecución de ciertas obras portuarias, convendría que el Gobierno dispusiera de uno o dos ingenieros de puertos, pero como no abriríamos una cátedra especial en nuestra universidad para este objeto, es más conveniente enviar al extranjero el número de jóvenes necesario para ejecutar las obras y luego su conservación y mantenimiento.

Se nos dirá que podríamos recurrir a los servicios de los ingenieros extranjeros; pero además de habernos dado ya muchos desengaños, nos mantendría en la situación actual, viviendo como tributarios siempre que de asunto científico se trata.

Los países como la Argentina, Chile, el Perú, España y el Japón, que diariamente perfeccionan sus instituciones docentes, no han desechado las becas, considerándolas como un medio de completar la educación que en el país se da. Lo que hay que procurar, es que además de la equidad y la justicia en su concesión, predomine el criterio de que la beca debe beneficiar igualmente al agraciado y al Estado que la concede, según esto, no debieran concederse becas sino para aquellas artes, ciencias e industrias que el Gobierno crea que deban desarrollarse en el país y para las cuales es de necesidad crear técnicos y especialistas.

Esto se conseguirá, mediante la formación de un plan de concesión de becas, formado con arreglo a las necesidades del Estado, y nó adjudicándolas sino mediante concurso. A medida que vayan vacando las actuales, serán sacadas a concurso para el estudio del arte o ciencia ya determinado, conforme al plan previamente convenido, no dejando a libre elección del aspirante la materia objeto del estudio. Por esto no puedo menos de aplaudir la concesión que se ha hecho casi sistemáticamente sólo de becas para el estudio de la pedagogía y de la agricultura, porque lo que más necesita fomentar el país, es la instrucción primaria y el desarrollo de su agricultura.

Otra clase de becas sería necesario establecer y éstas son las de viaje de estudio, destinadas especialmente a los profesores de las universidades, los que por turno y

durante un año irían a estudiar en el extranjero, los adelantos de la ciencia que profesaran. No necesito mencionar las ventajas que de ella se derivan porque todos sabrán apreciarlas.

Actualmente, algunos profesores hacen por cuenta propia estos viajes, derivándose de ello mucho provecho para la agricultura del país. Quiero señalar de paso un grave escollo con el que tropiezan muchos jóvenes que, a pesar de su buena voluntad, pierden su tiempo o no aprovechan lo debido en las universidades extranjeras. Me refiero al desconocimiento del medio y del idioma. Llegados los jóvenes a Europa, ignoran la organización de la enseñanza pública en esos países y a veces se ven obligados a desistir de su primitiva determinación de estudiar tal o cual carrera por falta de apoyo y dirección. Muchas universidades europeas atraen sistemáticamente los estudiantes del extranjero, haciendo reclamo como un hotel o una estación de baños; pero dictando sólo una enseñanza superficial y teórica.

El Ministro de Instrucción Pública y los consulados en las principales capitales de Europa deberían proporcionar los datos más fidedignos a fin de poder designar a los alumnos los establecimientos de confianza donde pudieran hacer sus estudios.

Muchas familias pudientes del Ecuador, pasan largas temporadas en Europa y educan allí a sus hijos. Otras también pertenecientes a la clase elevada, los envían a los colegios europeos durante algunas temporadas.

Unas y otras sacan muy poco provecho de esta educación.

A pesar de sus largos años de residencia, los sudamericanos no llegan a conocer el medio en que viven por su afán de snobismo que les ha hecho merecer el calificativo de "rastacueros," buscando para sus hijos esos colegios donde sólo se enseñan los deportes y las buenas maneras. Con esto, el chapurrear uno o dos idiomas y ciertos hábitos y refinamientos de costumbre, en pugna con el medio ambiente nacional, regresan al país en el que necesariamente están condenados a vivir en su calidad de propietarios agrícolas, ya hechos hombres, los jóvenes ven crearse a su alrededor, el prestigio y la posición que les da su fortuna y llegan a encontrarse en la clase dirigente desempeñando cargos públicos y enfrentándose con problemas superiores a sus conocimientos. Yo no me cansaré de vituperar esta manera de dar educación a sus hijos de la clase elevada, que se cree dispensada de hacerles seguir una clase profesional que para ellos sería muy útil y provechosa. Si los hijos de nuestros propietarios en vez de volver de Europa convertidos en señoritos salieran de las escuelas comerciales, industriales o agrícolas, nuestro país se hallaría mucho más adelantado.

CAPÍTULO VIGÉSIMO PRIMERO—RESUMEN.

A grandes rasgos y pasando por alto muchos asuntos que aunque de segundo orden no son por eso menos importantes, he dejado reseñadas las reformas más urgentes y más fáciles de implantar en nuestra patria, en el importante ramo de instrucción pública.

Para que un pueblo pueda llamarse civilizado, necesita no sólo haber adoptado el trabajo, las costumbres, las formas de gobierno y las instituciones de los pueblos que marchan a la cabeza del progreso, sino que en todos los actos se revele la influencia de la cultura y de la educación, contrarrestando los impulsos ancestrales del hombre primitivo. Sobre todo, es menester, que la cultura y la educación se hallen tan extendidas que borren las diferencias intelectuales entre las diversas clases y que no dejen entre ellas el hondo vacío ocasionado por la ignorancia y la abyección.

Nuestro país, por desgracia, no ha podido llenar esta condición última, y si en las ciudades más populosas, la mayoría de los pobladores adquieren un grado de cultura bastante elevado, el pueblo de las campiñas y de los arrabales, el de las altas planicies de los Andes, el ribereño de los ríos y el de las llanuras y selvas de la Costa, permanece sumido en la ignorancia y el abandono. A remediar los males que se derivan del analfabetismo, se dirige la instrucción primaria, a dar medios para la lucha por la vida; para ganarse

honrosamente el pan, se dirige la enseñanza profesional y técnica, y a crear una clase dirigente, fuerte, intelectual y severamente honrada se dirige la enseñanza universitaria.

La cultura general de la masa total de los habitantes del Ecuador, nos hace esperar que tornándose por medio de ella, cada uno de los ciudadanos, factor consciente del progreso, nuestro país entre en el rango de los completamente civilizados y siga la vida normal que llevan otros pueblos. Vendrán en seguida otros problemas que la civilización trae consigo, pero para resolverlos, estaremos mejor preparados que lo que hoy estamos. Resolvamos por ahora este, que es uno de los más importantes y uno de los primeros que debemos resolver.

Adjournment.

GENERAL SESSION OF SECTION IV.

NEW WILLARD HOTEL,
Friday afternoon, January 7, 1916.

Chairman, JOSÉ MARÍA GALVEZ.

The session was called to order at 2.30 o'clock by the chairman.

Papers presented at this session were pertinent to the following Pan American themes:

To what extent should elementary education be supported by local taxation, and to what extent by State taxation? What should be the determining factors in the distribution of support?

What should be the primary and what the secondary purpose of high-school education? To what extent should courses of study in the high school be determined by the requirements for admission to college, and to what extent by the demands of industrial and civic life?

Should universities and colleges supported by public funds be controlled by independent and autonomous powers, or should they be controlled directly by central State authority?

To what extent is coeducation desirable in elementary schools, high schools, colleges, and universities?

To what extent is an exchange of students and professors between American Republics desirable? What is the most effective basis for a system of exchange? What plans should be adopted in order to secure mutual recognition of technical and professional degrees by American Republics?

To what extent may college courses in engineering be profitably supplemented by practical work in the shop? To what extent may laboratory work in engineering be replaced through cooperation with industrial plants?

What preparation should be required for admission to medical schools? What should be the minimum requirements for graduation? What portion of the faculty of a medical school should be required to give all their time to teaching and investigation? What instruction may best be given by physicians engaged in medical practice?

What preparation should be required for admission to State and National colleges of agriculture? To what extent should the courses of study in the agricultural college be theoretical and general, and to what extent practical and specific? To what extent should the curriculum of such a college be determined by local conditions?

What should be the place of industrial education in the school system of the American Republics? Should it be supported by public taxation? Should it be considered as a function of the public-school system? Should it be given in a separate system under separate control? How and to what extent may industrial schools cooperate with employers of labor?

How can a nation prepare in the most effective manner its young men for a business career that is to be pursued at home or in a foreign country?

(a) In schools that are a part of the public-school system.

(b) In schools of private endowment.

(c) In special business schools of private ownership

Outline a course of study that will best prepare young men to engage in such a business career. Each suggested outline should consider not only the character of the educational system of the country for which the course of study is intended, but the desirability and practicability of a uniform course of business education for all Pan American countries.

The following papers were presented at this session, most of which were read by title:

¿Cuál será el fin primario y cuál el secundario de las altas escuelas de instrucción? ¿Hasta qué punto deberán determinarse los cursos escolares en las altas escuelas por los requisitos de admisión al colegio y hasta qué punto por las exigencias de la vida industrial y civil? by MIGUEL LARREINAGA.

¿Deberían depender las universidades y colegios sostenidos por fondos públicos de poderes independientes y autónomos o deberían estar directamente bajo el dominio central del Estado? by BERNABÉ SALGADO.

Intercambio de profesores y alumnos y reconocimiento de títulos, by SANTIAGO KEY AYALA.

Exchange of professors and students between the universities of the United States and Central and South America, by MANOEL DE OLIVEIRA LIMA.

Enseñanza práctica de la ingeniería, by JUAN MONTEVERDE.

To what extent may college courses in engineering be profitably supplemented by practical work in the shop? To what extent may laboratory work in engineering be replaced through cooperation with industrial plants? by ARTHUR H. HAMERSCHLAG.

¿Qué amplitud puede tener en los cursos escolares de ingeniería una provechosa práctica suplementaria en los establecimientos industriales? by JUSTINIANO SOTOMAYOR.

¿Qué cátedras del plan de estudios de una escuela médica deben ser servidas por doctores en medicina que ejerzan la profesión de médico? by CARLOS YBAR.

¿Qué preparación deberá exigirse para la admisión en las escuelas médicas? Cuál deberá ser el *mínimum* de requisitos para los grados? ¿A qué parte de la facultad de una escuela médica deberá exigirse la dedicación de todo su tiempo al profesorado y a la investigación? ¿Cuál es la instrucción mejor que puede darse por doctores consagrados a la práctica de la medicina? by FRANCISCO A. RÍSQUEZ.

¿Qué preparación deberá requerirse para admitir alumnos en los colegios de agricultura nacionales y del Estado? ¿Hasta qué punto en los colegios agrícolas deberán ser los cursos de estudios teóricos y generales y hasta qué otro prácticos y especificados? ¿En qué grado deberán determinarse los planes de estudios de cualquier colegio de esta índole por las condiciones locales? by B. H. A. GROTH.

¿Cuál debería ser el lugar de la instrucción industrial en el sistema de las Repúblicas Americanas? ¿Debería ser considerada como una función del sistema público escolar? ¿Debería darse bajo un sistema separado y bajo una organización aparte? Separate papers by JULIO CÉSAR BOLET, ALFREDO SAMONATI, JOAQUÍN CABEZAS, HENRY METTEWIE.

Industrial education for Latin America, by HAROLD E. EVERLEY.

¿Cómo puede una nación preparar de la manera más eficaz a sus jóvenes para una carrera comercial que deben emprender bien sea en dicha nación o en un país extranjero? Separate papers by SANTIAGO H. FITZ SIMÓN, ANTONIO L. VALVERDE, AGUSTÍN T. WHILAR, A. AUBERT, M. DELLEY, FRANCISCO ARAYA BENNETT.

La Asociación Bibliográfica Panamericana, by CARLOS SILVA CRUZ.

Una contribución a la comprensión panamericana, by JOSÉ MARÍA GÁLVEZ.

¿CUÁL SERÁ EL FIN PRIMARIO Y CUÁL EL SECUNDARIO DE LAS ALTAS ESCUELAS DE INSTRUCCIÓN? ¿HASTA QUÉ PUNTO DEBERÁN DETERMINARSE LOS CURSOS ESCOLARES EN LAS ALTAS ESCUELAS POR LOS REQUISITOS DE ADMISIÓN AL COLEGIO, Y HASTA QUÉ PUNTO POR LAS EXIGENCIAS DE LA VIDA INDUSTRIAL Y CIVIL?

Por MIGUEL LARREINAGA,

Ex-Subsecretario de Instrucción Pública de Guatemala.

I.

Las palabras en que está expresado el tema y su forma interrogativa, han menester una interpretación para adaptarlo al concepto que nosotros los hispanoamericanos tenemos de lo que es "alta escuela" y de lo que es "colegio," para que al entrar en materia no haya equivocaciones ni confusión en las ideas.

Por equivalente de la expresión "alta escuela" usamos en Guatemala y en otras Repúblicas, la de "enseñanza secundaria" (que en México llaman "preparatoria"), y que es el conjunto de materias sujetas a un plan de estudios, que se imparten en las aulas al terminar la enseñanza primaria, o sea cuando el alumno ha obtenido la califica-

ción de "aprobado" en sus exámenes de curso, y frisa aproximadamente en los 13 años de edad.

"Colegio" es rigurosamente un *sínónimo* de escuela; pero por lo común se da aquel nombre a los establecimientos de enseñanza que son de propiedad particular y en donde se admiten como educandos los niños cuyos padres pueden pagar pensiones más o menos elevadas, según la categoría o lujo del colegio; pues los otros centros docentes, sostenidos con fondos del Estado, en donde la enseñanza para el pueblo pobre se da gratuitamente, se conocen con el nombre de "escuelas públicas" o "nacionales." Esta es la diferencia marcada por la costumbre.

En la pregunta del tema se da a entender como que el "colegio" ocupa un grado superior a la "alta escuela;" pero yo pienso que no es así y tomo la idea no como literalmente está expresada, sino como me parece que fué concebida por su autor, procurando penetrar en su mente, para que mi respuesta resulte concorde.

Ahora bien, fijados los términos en su sentido genuino, haré la *análisis* del tema.

II.

En mi concepto el fin principal de la enseñanza secundaria (alta escuela) es mostrar el verdadero camino del desarrollo intelectual, moral y físico del alumno.

Digo que es éste el objeto primordial, fundándome en los principios en que se asienta la pedagogía, que es la ciencia de la educación.

Un niño de 12 a 15 años comienza su desarrollo de manera paulatina, sea cual fuere la precocidad que le supongamos; y la preparación previa que hubiese adquirido en la "escuela primaria" apenas sí habrá bastado para despertar sus ideas ordenadamente, pero en una extensión tan restringida, que puede calcularse por el número de voces de su idioma que sepa con perfección; ese número no pasa de unas quinientas palabras como *máximum* en casos muy excepcionales.

Es cierto que durante sus cursos secundarios va a repetir, ampliándolos, aquellos que ya de una manera elemental hubo pasado, lo cual no quiere decir que esta repetición ensanche sus horizontes hasta el límite, sino que va a sumar algunas nociones nuevas sobre las que tenía adquiridas y a hacer algunas rectificaciones de errores que la deficiencia o mala dirección de sus maestros anteriores, le imbuyeron.

Si en el niño no se ha inculcado espontáneo amor al estudio, sino que se le obligó a dar sus lecciones sin comprender ni su sentido inmediato ni su alcance final, la obra de preparación es tan incompleta, que puedo asegurar que de cada diez alumnos resulta uno dispuesto a reconocer su inclinación y capacidad para el estudio de alguna materia determinada; los nueve restantes no saben si tienen predisposición natural para las ciencias exactas (matemáticas, mecánica, física, química) o para las ciencias naturales (zoología, botánica, mineralogía), o para las sociológicas (derecho, historia, filosofía, literatura, etc.); y no me refiero a las artes en general (bellas y mecánicas), porque quiero circunscribirme a los otros conocimientos que deben adquirir de preferencia en las escuelas primarias.

Cuando el escolar empieza sus estudios de "secundaria" no solamente ha olvidado mucho de lo que supo en sus precedentes cursos, sino que erróneamente cree que es muy poco lo que tiene que aprender porque "todo lo sabe," y poseído de ese falso concepto de sí mismo, es muy débil el empeño que pone en instruirse; y por consiguiente, muy poco también el resultado que alcanzan los profesores; tanto más negativo, cuanto que los métodos que emplean para explicar las materias, es muy diverso del que antes se empleó con los alumnos. Se limitan a exponer rutinariamente las teorías de los autores y casi nunca cuidan de que sus discípulos "piensen." Generalizan pero no intensifican sus enseñanzas. Un profesor sigue en sus ideas orientaciones metafísicas; otro las de la escuela teológica; otro las de la positivista; otro las suyas particulares; otro quizás ninguna propiamente científica, y todos, cada uno por su lado, contribuyen a mantener la anarquía intelectual que reina por lo común en la "alta escuela."

En vista de esta ausencia de orden, el alumno inteligente y aplicado hace esfuerzos individuales para seguir una senda fija que le conduzca al desarrollo de sus facul-

tades: los que no tienen aquellas condiciones naturales, van quedándose en rezago y no logran comprender por qué se les obliga a estudiar; es decir, que no se penetran del fin general de sus estudios y no ponen nada de su parte por vencer la dificultad que sale a su encuentro a cada paso para detenerles en el camino de su perfección intelectual.

Esta sensible diferencia desaparecería con solo uniformar la intensidad de la enseñanza bajo un método común y constantemente seguido en todos los ramos. Así marcharían los alumnos, sin excepción, sobre una línea recta, fija, que no permitiría retrasos ni desalientos. Bajo la hábil y sistemada dirección del profesor, el avance continuaría igual y seguramente hacia la meta que traza la "Alta escuela;" los esfuerzos no serían vanos y sobresaldrían en sus adelantos aquellos alumnos pródigamente dotados por la naturaleza, en tanto que llegarían a buena altura hasta los desheredados de intelecto, por la sola fuerza de la constancia y del método, gozando todos de la misma preparación artificial para las luchas en los torneos del saber, pues no se da un solo ser humano en estado normal que no traiga alguna disposición para aprender algo bien.

El trabajo del buen profesor consiste y debe tender a descubrir esa inclinación y disposición del discípulo, y en desarrollarla hábilmente en sus mayores dimensiones en la escuela. Logrado esto, está conseguido el fin único de la educación. El éxito completo en la sociedad, en el mundo, en la vida práctica, es cuenta del estudiante, puesto que a él le interesa obtener de sus aptitudes y conocimientos el mayor provecho que pueda.

Desde el punto de vista de la cultura moral, en la "alta escuela," que está calculada más para instruir que para educar o formar el sentimiento, no hay medios especiales que sirvan para practicar con dedicación los sanos principios que informan la personalidad moral, no solo porque no hay una asignatura que trate de explicar la ética y sus problemas durante los primeros cuatro años del curso preliminar ni en los subsiguientes, sino que se haya admitido, contra lo que los más eminentes pedagogos estatuyen en sus doctrinas, que la moral y la religión no se enseñen en las escuelas comunes, por ser incumbencia exclusiva de los padres de familia.

No es este el momento de combatir semejante error, pero creo que viene al caso sugerir la idea de que reportaría una palpable conveniencia para la sociedad la institución de clases intermedias de moral en los programas de "enseñanza secundaria" así como cuidar con esmero de la educación social o urbanidad y buenas maneras que tanta falta hacen a la juventud que, por ignorancia, hace un tristísimo papel por lo grotesca e incivil que se presenta ordinariamente, causando pena y hasta vergüenza su absoluta falta de cultura.

Por lo que respecta a la educación física, mucho han ganado los pueblos de Hispano América con la adopción de costumbres inglesas y norteamericanas, que prestan especial atención a los juegos atléticos y otros deportes que dan por resultado el desarrollo de los órganos; pero hay que objetar que esas aficiones se apoderan de los alumnos hasta descuidar sus estudios; y así como desnaturalizan el fin educativo la inacción y el encierro, porque los miembros debilitados no cumplen su destino dándole a la humanidad el contingente que necesita, no desnaturaliza menos aquel fin crear atletas musculosos con las cabezas vacías, con mucha fuerza física y atonía intelectual.

Tampoco es la "alta escuela" un medio para la educación física, pero los estudios de higiene y fisiología dan a comprender al estudiante que es necesario cuidar de su cuerpo y mantenerlo robusto y sano.

Podría extenderme aún mucho más para petentizar mi demostración, agotando los razonamientos que militan del lado de mi respuesta, si no temiera ser difuso; mas pienso que con tener presentes las categóricas afirmaciones de los sabios que han opinado acerca de la instrucción en general, adquirida completa y metódicamente, la parte que se refiere a la secundaria (alta escuela) no pasará de ser período de preparación puesto que sólo conduce a la opción a una carrera y no lo es por sí sola.

Como tal fin, encuentra J. F. Herbert que es la "fuerza moral del carácter," y en sus métodos pedagógicos no sigue otro objetivo.

"El fin principal de la educación," dice Basedow, debe ser preparar al niño para una vida feliz, patriótica y altruista."

El neohumanista Niethammer, explica ese fin con el aislado concepto de "humanidad," que abarca el estado actual de ella como colectividad civilizada.

Para Schleiermacher es también "la preparación para la vida en sociedad," pensamiento que domina en su obra "Escritos Pedagógicos" (Erziehungslehre).

Desde Aristóteles hasta Regler, en los tiempos antiguos como en los modernos, se ha creído lo mismo; pero, en mi concepto, jamás ha tenido tan rigurosa y exacta razón para ser aplicado el concepto que se tiene de la "alta escuela," en el sentido de "instituto de preparación" para orientar al alumno que haya de seguir cualquier carrera científica o literaria, como en nuestros días en que las tendencias a la enseñanza de inmediata aplicación práctica se acentúan en progresión creciente.

En efecto, no tenemos más que echar una ojeada sobre los países en que predomina este sistema moderno y compararlos con aquellos que se han aferrado, por razones de tradición, al antiguo régimen didáctico, para observar los resultados que realzan de bulto.

Veamos en Europa el grado que ocupan, desde el punto de vista didascálico, en la escala de la cultura y de la prosperidad en ciencias, artes, industrias, comercio y riqueza Inglaterra, Francia, Alemania, Suiza, Italia, al lado de Portugal, España, Noruega, Rusia, Grecia y otras; y la diferencia a favor de las primeras contra las segundas es tan palmaria que no necesita demostración.

La experiencia ha evidenciado que los pueblos que han hecho consistir su educación en teorías vanas; que han creído que el escolar debe llenarse la cabeza de nombres substantivos, fechas y definiciones huecas; que su ciencia debe consistir en hacer largos cursos de latín y griego, desconociendo la lengua propia; que ha de conocer con acopio de detalles lo que hicieron los pueblos egipcio, indo o hebreo 4,000 años antes de Jesú-Cristo, mientras ignora los nombres de sus antepasados y los hechos gloriosos de sus héroes y lo elemental de la historia de su pueblo; que ha de conocer pulgada por pulgada los territorios de Asia y África y llevar en la memoria la estadística de su población, mientras desconoce hasta la división administrativa y la verdadera situación, posición, recursos y topografía de su tierra; que ha de aprender a viajar (en teoría) desde Suecia hasta Australia y desde Pekín hasta el Cabo de Hornos pasando por todos los continentes, mientras ignora las distancias que hay de su pueblo a la capital de su nación. Estos países, repito, que de tal suerte educan a sus escolares, pierden lastimosamente su tiempo y su dinero para sacar, al fin, de sus escuelas, hombres incapaces de ganar la vida e inutilizados para aprender después un arte u oficio; o profesionales sin conocimientos ni clientela que acaban por consumir sus energías en el ejercicio de trabajos groseros que apenas se les producen lo indispensable para sobrellevar una existencia precaria y miserable.

¿Para qué sirvieron, entonces, tanto libro y tantos años consumidos en las aulas, si al cabo de semejantes afanes lo único que se encuentra es un fracaso? ¿Para qué tanto esfuerzo intelectual (llámesele así) si con todo él no se consiguió el fin que la sociedad busca?

III.

Demos ahora un vistazo a los "programas" para analizar después sus efectos.

Es de advertir que los países hispanoamericanos han adoptado diferentes aplicaciones de un solo sistema que consiste en la múltiple aglomeración de materias, aunque entre ellas no exista el enlace que tiene demarcado la filosofía y determinado la ciencia pedagógica.

La cuestión para nuestros hombres que han llevado la alta dirección de la enseñanza, ha consistido en dar demasiada amplitud y extensión a los "programas" que imponen;

no les importa (porque comúnmente ignoran los preceptos metodológicos) que no haya tiempo ni capacidad de parte del profesor y del alumno para desarrollarlos debidamente.

Para la mayoría es desconocido el triángulo esquemático fundamental de la enseñanza y por eso no siempre han pensado en el alcance de estas tres proposiciones: 1ª, Qué y cómo debe enseñarse; 2ª, Quién ha de enseñar; 3ª, A quién se va a enseñar. Las que reducidas a términos simples, pueden plantearse así: El programa, el maestro, el alumno.

Unas cuantas consideraciones bastarán para demostrar la deficiencia práctica de la primera de aquellas tesis.

El programa general no ha sido formado por una sola persona competente, en toda la extensión de la palabra, por una docta corporación que tenga conciencia de su fin y de la suficiencia de los medios que han de adoptarse para el lleno de su cometido.

Lo que en estos casos se ha hecho es copiar de otros países sin previo estudio de las leyes de adaptación y tal vez por satisfacer una necesidad local del momento; y el resultado de esta falta de cohesión y uniformidad en las ideas refluye en la sociedad determinando en ella un atraso psicológico que es rémora natural del progreso. Y sus consecuencias son trascendentales: el perjuicio inmediato es para el inocente alumno, y el mediato es para el país que abunda en hombres imbuidos de falsedades, vacuos de cerebro, sin carácter y sin energía para reaccionar en sentido favorable, pues la palabra del maestro ha sido como un evangelio para el cual creen que no hay rectificación posible. Es la ciega perpetuidad del error juntamente con la incapacidad de sacudirlo ni rectificarlo.

El que dejo dicho es el primer inconveniente. Después vienen otros que no son de menos peso, y no puede pasarse en silencio el que estriba en la falta de "unidad de pensamiento," porque a eso debe atribuirse la incoherencia con que el alumno adquiere sus ideas.

He manifestado antes que es común que los profesores sigan diferentes escuelas o métodos de filosofar y que es forzoso que la exposición de todas sus doctrinas sea de acuerdo con sus respectivos credos; y como los programas por su parte, hayan sido preparados de antemano, o lo sean por estos profesores, están informados de las mismas disparidades, sobreviene como corolario ineludible la "anarquía intelectual" que arrastra como doble consecuencia la misma que dejó anotada al hablar de la redacción y acomodación de los programas, es decir, un mal para el alumno y otro, reflejo, para el país.

No es menos considerable lo que pasa al respecto de la falta de encadenamiento lógico entre las materias que se enseñan y el quebrantar arbitrariamente la gradación científica en que dichos ramos se encuentran escalonados.

He visto programas que señalan el estudio de la matemática comenzando por la geometría; o el de la química antes de la física; o el de la mecánica (cantidad intensiva) sin preparación en álgebra; o el de la filosofía teológica en el primer año; y de esta suerte tal ausencia de lógica, que es imposible que ningún alumno adquiera nociones claras y verdaderas en estos ramos, por más que aprenda de memoria todas las lecciones que contenga un libro de texto.

Es irracional, pues, prescindir del sistema que las ciencias por su naturaleza misma reclaman que se imponga.

Agréguese a ésto, ya que hago gracia de otros muchos defectos, el crecido número de materias que contienen los "planes de estudios" de "secundaria" (alta escuela), y piénsese por un momento en el enorme esfuerzo que necesita efectuar el alumno para lograr formarse idea de lo que tendrá que estudiar. Es cierto que el escolar está muy lejos de hacerse reflexión semejante, porque nunca se le presenta en conjunto el grupo de materias de estudio, y a su rudimentaria percepción escapa este raciocinio; pero no sucede lo mismo al hombre que piensa y que desde fuera, por decirlo así, ve el cúmulo inmenso de ramos que abraza el plan.

No es esto, pues, lo que ha de enseñarse al joven para asegurar su éxito en la carrera que se proponga seguir. Ahora viene la segunda parte y es la que se relaciona con la manera de enseñárselo a la vez tanta asignatura.

En mi concepto el mejor sistema es el "individual," que consiste, como muy bien saben los pedagogos, en tomar a cada alumno separadamente y explicarle hasta que lo comprenda, cada número de cada materia de los programas: no pasar a otro punto sin estar cierto de que el anterior fué perfectamente inculcado; y así proceder con todos los asistentes a las clases, pues de otra manera no se consigue que concentren toda su atención en las explicaciones del maestro. Se me objetará (y soy el primero en convenir que con razón) que en las numerosas clases de la "alta escuela" esto es materialmente imposible por cortedad del tiempo, dado el máximo de 50' para cada asignatura; pero arguyo que esta dificultad no es tan insuperable como parece a primera vista, si se atiende a que puede disminuirse el número de alumnos hasta donde sea necesario, como, por ejemplo, 20 en clase: disminuir las tesis del programa de cada asignatura; disminuir el número de asignaturas, y aumentar el número de años, haciendo una distribución en la forma que expondré al final con el objeto de aclarar esta idea, al proponer que se adopte en toda la América de habla española como sistema uniforme.

Vivimos más lejos de nación a nación de América, muchas veces aunque las fronteras se toquen y una línea convencional las separe, que del continente oriental con el Atlántico de por medio. ¿Por qué? Es muy llana la respuesta: porque ni el comercio ni las relaciones intelectuales nos unen. Lo que hay de común, prácticamente, entre nosotros, se resume en las palabras "raza," "lengua," "origen," "historia." Lo demás es tan diverso, dista tanto, que ni un leve contacto nos pone en condición de conocernos. Ni instituciones, ni costumbres, ni tendencias, ni aspiraciones, ni esfuerzos son comunes, aunque sí semejantes.

Obramos en la agitación de nuestra vida lo mismo que si estuviéramos solos en América, en un aislamiento tal, que a veces hasta los nombres de los países hermanos suenan como extraños en nuestros oídos, como por una de aquellas raras casualidades que muy de tarde en tarde se presentan. No basta para conocernos que un órgano de la prensa dé alguna noticia, por lo regular sin mayor interés, puesto que jamás se ha despertado y cultivado recíprocamente entre los hispanoamericanos el sentimiento de solidaridad que debería existir, y por eso estamos aun lejos de formar comunidad: no hay entre nosotros vínculos que nos acerquen, ya no diré que nos unan.

Para evitar que se nos enrostre esa frialdad que cada vez relaja más nuestros afectos mutuos, nos consolamos con creer que vive latente en nuestro corazón el amor a los pueblos de igual origen; pero estos sentimientos tan laudables como platónicos, no se resuelven en hechos.

Cualesquiera que sean las crisis que los pueblos atraviesen, ya provengan de fenómenos físicos, ya sean sociales los que afecten a sus habitantes, pueden estar ciertos de que la participación que en su alivio tomen los vecinos o hermanos, muchas veces no pasará de palabras más o menos halagadoras.

¿Llena este modo de ser las aspiraciones de los altruistas americanófilos?

Lejos de eso: deja una amarga decepción que contribuye a enfriar el sentimiento de confraternidad.

Aunque no fuera sino por propio interés, debieran las naciones de América acercarse las unas a las otras si no para formar una confederación política, porque esto es absolutamente imposible, siquiera para fundar un sistema de uniformidad que moldeara sus instituciones sociales sobre bases firmes y únicas, para elevarse todas juntas y a un tiempo al mayor nivel posible en la escala de su cultura intelectual.

A parte del prestigio que ante el resto del mundo alcanzarían, muchos bienes materiales tendrían que surgir para beneficiarlas a todas en la medida que hubiesen menester y sus recursos les permitieran. De sus relaciones frecuentes que serían el principio de una futura solidaridad, depende el acercamiento de éste, el conocimiento verdadero de los países entre sí; y de éste, las mil ventajas que reportaría el comercio, la

industria, la agricultura, las ciencias, las letras, las artes, y, en una palabra, el aumento poderoso del coeficiente de la producción general en la América hispana.

Unas ideas traen aparejadas otras y sin dificultad vuela el pensamiento hacia una digresión; pero estas consideraciones que acabo de hacer se desprenden sin esfuerzo del tema especial en que me ocupo, y no he podido prescindir de hacerlas a riesgo de apartarme, en leve curva, de la línea recta de esta conferencia.

IV.

Pero volveré a tomar el hilo de mi exposición, recapitulando las ideas sentadas, y confirmando con repetir que, a mi juicio, el fin primario de la enseñanza en la "alta escuela" es preparar al alumno para sus estudios ulteriores.

Esto planteado, externaré la idea que tengo del fin secundario de la misma enseñanza, para explicar el contenido del segundo inciso de la primera proposición del tema.

Abarca este segundo punto un círculo más extenso, por cuanto ya no se concreta a individuos aislados, sino que tiende a realizar la cultura social; y así debe ser desde el momento en que mejorando la condición de los componentes, el todo homogéneo que estos formen, por fuerza ha de resultar en superiores condiciones de las que posea cuando sus partes carecían de suficiente educación.

El esfuerzo colectivo se efectúa en razón directa de la potencialidad de los elementos que le constituyen, lo cual quiere decir que si existen en los individuos principios de perfección, por rudimentarios que se les suponga, al unirse, tal vez al solo ponerse en contacto, se completan mutuamente, dando por producto el de una multiplicación de fuerza intelectual en beneficio de la sociedad entera.

Considerando esta teoría dijo el célebre pedagogo Pestalozzi en su famosa memoria sobre el "método:"

¿Qué ha hecho Europa a fin de utilizar en todos los ramos de su educación popular estas leyes del mecanismo físico? ¿Qué se ha hecho para poner en armonía los medios elementales del conocimiento humano, que llegaron hasta nosotros por el esfuerzo de miles de años con el ser del espíritu humano y las leyes concernientes al mecanismo físico? ¿Qué ha hecho nuestra época para poner en práctica, al menos en la organización de sus establecimientos de enseñanza, el ser de estas leyes en el lenguaje, la escritura, el dibujo, la lectura, el cálculo y la medida? Yo no veo nada. No veo en la organización actual de estos establecimientos, en tanto como se dirigen a educar las clases inferiores del pueblo, ninguna señal de una referencia a la armonía general del todo y a la graduación psicológica que exigen esencialmente esas leyes. No: ello es notorio; en los medios actuales de la instrucción de las clases bajas, no sólo domina un desconocimiento general de estas leyes, sino también una oposición bárbara universal de las mismas. Y cuando vuelvo a interrogar: ¿Cuáles son las consecuencias inequívocas que ha producido en esas pobres clases de la sociedad europea el rudo desconocimiento de aquellas leyes? Entonces no puedo ocultármelo: el embotamiento sensible, la parcialidad, la oblicuidad, la superficialidad y la vacuidad pretenciosa, que distinguen a la masa popular de nuestro tiempo, son una consecuencia evidente de la ignorancia, de la enseñanza parcial, aislada, antipsicológica, desprovista de fundamentos y de orden, que sufre la pobreza de nuestra especie en nuestras escuelas. * * *

Pestalozzi hablaba en esos términos el año de 1800, hace de esto 115; si resucitara y se pusiera a estudiar el estado actual de la masa de población europea (como él dijo), vería que no es mucho lo que han avanzado en el camino de su perfección y de su felicidad; y no lo digo por el estado actual de guerra de estos momentos, en que una crisis de las de mayor entidad que ha sufrido la humana especie, la ha obligado a retrogradar muchos puntos en la escala de su progreso, sino juzgando, a través del prisma sociológico, la relativa normalidad del ser de todos los pueblos como factores de la cultura del hombre.

La ley del desenvolvimiento de las fuerzas psíquicas actúa sin cesar y arranca a la naturaleza sus secretos a despecho de todo, acrecienta cada día el ya infinito número de sus conquistas puestas al servicio de la humanidad para hacerle menos penosa la lucha por su existencia y más llano el sendero de la dicha; pero si hacemos un re-

cuento y reducimos a cálculo de guarismos los efectos de aquella ley, resultará sin duda muy corta aún la suma de los hombres que se aprovechan bien de los triunfos de la inteligencia y del trabajo. La gran mayoría restante queda muy lejos de disfrutar de los beneficios de tales conquistas y son tan primitivos como hace 1,000 años, su vida y sus medios para resolver el problema de su cultura.

La única compensación media que se puede oponer en descargo a la responsabilidad que pesa sobre las clases dirigentes, como educatrices, es que los pueblos de hoy son muchísimos más que antes y que para difundir las luces sobre ese medio enormemente grande, son precisas fuerzas proporcionales de las que todavía no es fácil disponer: no necesito repetir que es la "escuela" una eficiencia civilizadora.

Ahora viene otro punto capital: ¿Cómo debe enseñarse?

Encerrémosnos en el campo de nuestra América Hispánica y procuremos tirar las líneas que demarquen la figura general del sistema que debemos seguir, si queremos entrar en una halagüeña y posible realidad.

Adoptemos un plan, una norma, una pauta que nos sirva de guía, y no salgamos de ella si no es mejorando su sistema de acercarnos más y más al fin cultural de la raza americana.

Tenemos, por fortuna, eminentes pensadores y sabios especialistas en materia de educación, que nos iluminarán con las luces de su inteligencia y señalarán el derrotero definitivo de la enseñanza: en ellos está nuestra esperanza y confiamos en que de este Congreso habrá de salir la idea máter; pero aunque yo milite en la última fila, como el más modesto de los intelectuales, allegaré mi grano de arena para contribuir a esta gran obra hispanoamericana.

La sugestión de una idea es germen de otras muchas que surgen, se multiplican, crecen, llegan a tomar mucho cuerpo y al fin se imponen y dominan con el carácter de verdades indiscutibles.

Resumiendo, a guisa de conclusión, lo que queda expuesto, no quiero dejar de tener presente que el fin secundario de la "alta escuela" es colectivo, por cuanto es la sociedad humana la que saldrá gananciosa en último resultado de la buena y uniforme educación de la juventud: que no conviene apartarse del punto de mira a donde se dirige la civilización en general; y, por último, que el fin único de la raza humana es su perfección, mediante la de cada uno de sus individuos, por su triple y completo desenvolvimiento físico, moral e intelectual, adquirido en las buenas escuelas basadas en el plan pedagógico-positivista que la filosofía moderna, fundándose en la observación, la experiencia y la prueba, ha considerado como el solo criterio infalible de la verdad científica.

V.

La segunda cuestión, expresada también en forma interrogativa, contiene, a su vez, dos miembros que requieren respuesta aparte.

He aquí el primero: "¿Hasta qué punto deberán determinarse los cursos escolares en las 'altas escuelas' por los requisitos de admisión al colegio?"

Esa determinación no podrá fijarse en una conferencia de esta índole, sino en los programas de cada asignatura, puesto que dependen los límites de la extensión que quiera darse a la enseñanza de las materias; pero con el fin de trazar las líneas generales dentro de las que han de encauzarse todos los ramos de estudio, propongo como conclusión un plan en el que de una sola ojeada pueda verse con claridad esa determinación de los cursos escolares, cuya ventaja se comprenderá mejor con las siguientes explicaciones, que no serán sino la aplicación práctica de la doctrina pedagógica expuesta por los grandes maestros a quienes tendré que citar más de una vez en apoyo de mis teorías.

Sabemos que el resultado del aprendizaje está en razón directa del tiempo y de la intensidad que se empleen en hacerlo, de tal manera que la dedicación al estudio de una sola materia es infinitamente más provechosa que distraer la inteligencia del alumno por distintas ramas, porque ninguna de ellas alcanza la relativa perfección que exige la utilidad práctica del estudio; mientras que concentrando el esfuerzo inte-

lectual en un campo limitado, los conocimientos serán mayores y se obtendrá una especialización verdaderamente provechosa para el profesional y para la sociedad a quien presta sus servicios; sin perjuicio de lo cual es posible también hacer uso productivo de las nociones accesorias que se hubiesen adquirido. Todos los eminentes maestros, los pedagogos que han enriquecido la ciencia con sus constantes observaciones, están conformes con la exactitud de este principio.

Pueden consultarse las obras de Froebel, Pestalozzi, Spencer, Alcántara-García, Calkins, Natorp, Zulueta, Weimar, Compayré, Brackembury, Barth, Herbert, Rein, y de otros muchos, sin que ninguno de ellos discrepe en esa idea, por considerarla fundamental de la verdadera enseñanza; y aun cuando ninguno de esos sabios la hubiese emitido ni apoyado, el simple sentido común indica que así debe ser.

Por eso pecan de ilógicos todos los sistemas de enseñanza que pugnen contra tan elemental axioma: por eso también trabaja la ciencia hoy con el fin de desterrar errores tanto más dañinos cuanto más extendidos se hallan entre las clases docentes-rutinarias.

Consecuente con lo que dije (y me parece haber comprobado) de que la "alta escuela" es un período de preparación, debo considerarlo desde ese único punto de vista que seguiré hasta el final para no romper la unidad de mi idea ni la lógica cohesión de las derivadas.

Como no todos los alumnos que entran a la "alta escuela" (secundaria) se dedicarán, después de concluirla, a una misma profesión, pues lo natural es que elijan aquella para la cual su vocación, su predisposición natural o su conveniencia les llama, principia mi plan de estudios por una base fija que son los estudios que durante el primer año lectivo tendrán que hacer todos los cursantes.

Durante ese tiempo pueden pensar en qué clase de estudios profesionales se decidirán a seguir; y si por una circunstancia cualquiera abandonan la "secundaria" al terminar el primer año, llevan un caudal suficiente de conocimientos necesarios y de gran utilidad en la vida.

Terminado ese primer año con la aprobación obtenida en el examen de todas las materias cursadas, puede el alumno inscribirse como estudiante de los ramos señalados para optar (al fin de dos cursos sucesivos de un año cada uno) al título de bachiller en ciencias exactas, o de bachiller en ciencias naturales, o de bachiller en ciencias políticas, o de bachiller en filosofía y letras, o de bachiller en ciencias pedagógicas, etc., título que le habilita solamente para seguir las carreras de ingeniero, médico, abogado, maestro, etc., que puede terminar en menos tiempo del que en la actualidad se exige en casi todos los países de Hispano-América, lo cual no es poca ventaja para el estudiante. Podría haber quien objetase que mi sistema propuesto fuerza la voluntad del alumno, porque le obliga a seguir o más bien a elegir carrera con alguna anticipación y no en el momento previo a empezarla; pero yo contesto que la objeción no es fundada, ya que se convierte en favorable, desde que el alumno cuenta con un año de estudios generales que le abren campo para conocer mejor sus inclinaciones y así adoptar la profesión más adaptable a ellas; y, por otra parte, los dos años de cursos para cualquiera de los bachilleratos, son un tiempo corto que en nada impide comenzar otros dos y de todos modos resulta, en el cómputo final, menos meses y menos cursos que si hubiera seguido el plan vigente que exige un *mínimum* de cinco años por término medio.

Supongamos que un cursante ya obtuvo su título de bachiller en ciencias exactas que, como queda dicho, le habilita sola y exclusivamente para hacerse ingeniero y que esta carrera le es imposible por cualquier circunstancia: en tal caso estudia en la "secundaria" las materias necesarias para su nueva carrera, quedando después apto para abrazar dos profesiones si estuviere en condiciones de llevarlas a término, y si no, siempre habrá ganado acumulando diversos conocimientos.

No encuentro en ésto dificultad alguna, por el contrario: facilidad y amplitud para la opción del estudiante. Y, a mayor abundamiento, agregaré que la rebaja de tiempo beneficia a la vez al alumno, a la instrucción pública y a la sociedad en general que se aprovecha más pronto de lo que puede producir la generación que educa.

Lo que debe exigirse rigurosamente a cada alumno es que haga sus estudios y sus exámenes a conciencia para bien de sí mismo, pues más le daña a él el engaño que a sus padres o maestros.

Los certificados de aprobación y competencia obtenidos en la escuela inferior, serán los requisitos indispensables, aparte de otros reglamentarios que existan, para que un alumno ingrese como cursante al colegio o "alta escuela."

VI.

El segundo miembro de la pregunta propuesta por el Congreso actual se refiere también a determinación de cursos escolares, pero atendiendo a las exigencias de la vida industrial y civil.

Para llenar la misión que en la vida social tiene el ejercicio de las industrias, creo que no se necesita que el obrero conozca más de las materias señaladas en el primer curso del primer año de "secundaria," terminado el cual puede el alumno pasar al taller, fábrica o lugar de trabajo que elija, en donde tendrá que perfeccionarse en su respectivo oficio; y aun para el aprendizaje de las bellas artes, posee los conocimientos precisos para su vida civil y una elemental preparación para sus nuevos ejercicios como artista.

La tendencia esencial de la civilización es generalizar, extender su influjo por todos los países de la tierra: donde quiera que haya hombres hay sujetos para mejorar su condición, y elementos de propaganda y transmisión de ideas; pero si limitásemos los medios de consecución de los altos fines civilizadores, trabajaríamos contra lo mismo que nos proponemos alcanzar; no es ésta la labor racional que el hombre debe emprender en pro de la comunidad de su especie: por eso para que cada individuo ponga algo bueno en el fondo social, de modo que él saque provecho en relación a su trabajo y la sociedad también en la de la ayuda que preste al éxito del esfuerzo individual, conviene que exista cierta homogeneidad entre el uno y la otra.

Para mayor claridad de este concepto, permítaseme materializarlo con algún ejemplo. Imaginémosnos una región en la que sólo se explotan minas, a donde llega un profesor especialista en metafísica: con todo su caudal de ciencia abstracta perecerá de hambre; mientras un mozo robusto y fuerte, pero tan ignorante como un pez y apto sólo para echarse a cuestras un pesado pedrejón, al poco tiempo medra y hasta enriquece. En este ambiente posee el mocetón armas adecuadas para la lucha por la existencia, en tanto que el sabio profesor se encuentra inermes y sucumbe. Supongamos que un rico joyero, muy hábil en la compostura de relojes, trata de ejercitar el arte que mejor sabe, en alguno de los muchísimos y populosos lugares de América, habitados por indígenas que jamás han tenido un reloj ni comprenden para qué pueda ser útil una joya. ¿Podrá este hombre obtener provecho de sus habilidades y riqueza en un medio en que ni ésta ni sus habilidades tienen un valor práctico?

Mil más de estos ejemplos se le ocurren a cualquier mediocre inteligencia para convencerse de que la desigualdad de medios sociales imposibilita o por lo menos entorpece, el ensanche de la cultura y limita la vida a una exigua órbita que se convierte en valladar infranqueable para que la civilización penetre de llano en todas partes.

Vuelvo a mi respuesta del tema y concluyo: que para los efectos de la "alta escuela" (secundaria) para satisfacer las exigencias de la vida industrial y civil, no basta que se llenen todos los requisitos que he apuntado acerca de programas, de materias de enseñanza, de métodos escolares, de sistemas pedagógicos y otros detalles, no; es preciso, es indispensable, que se adopte un plan uniforme para toda la América, porque es la única manera de que desaparezca la diversidad de medio ambiente social, diversidad que es muro ante el cual se estrella el esfuerzo y se detiene el avance de la civilización.

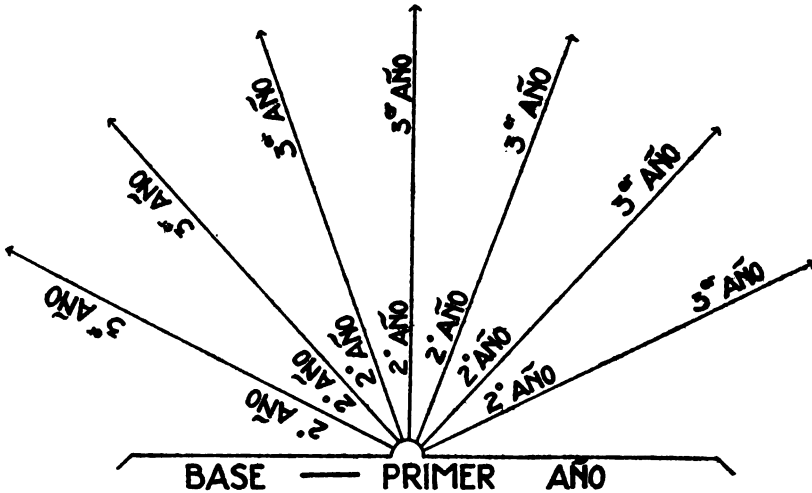
Todo lo que no sea llegar hasta la uniformidad es, en mi sentir, trabajo inútil en materia de enseñanza; y hasta me atrevo a llamarle pernicioso, porque deja a los pueblos de América encerrados dentro de sus propios límites y horizontes lugareños,

aprisionando el pensamiento, cuyas alas necesitan volar sin restricciones por el libre Continente Occidental.

Estoy muy lejos de creer que solo yo soy capaz de sugerir como original esta idea; pero excito con el entusiasmo y vehemencia de mis sentimientos acendradamente americanistas, a los muchos sabios y pensadores que han concurrido a este Congreso para que coadyuven entre sí, y yo con ellos (aunque en el más modesto grado de la escala del influjo intelectual) para que de este certamen brote algo en provecho positivo de nuestros países y no se quede en hermosa teoría, pero teoría al fin, que muy pronto cubra el polvo del olvido, tanto bello trabajo y tanto proyecto como ha originado el trascendentalísimo problema de la instrucción pública.

VII.

Sírvame para resumir cuanto llevo dicho el siguiente esquema gráfico, en el que al primer golpe de vista se comprende el plan concebido del objeto y fines primordial y secundario de la "alta escuela" (enseñanza secundaria), y que respetuosamente propongo a la ilustrada consideración de este Segundo Congreso Científico Panamericano:



- Bachiller en artes mecánicas para optar al título de Maestro en Artes y Telegrafía.
- Bachiller en ciencias comerciales para optar al título de tenedor de libros.
- Bachiller en ciencias políticas para optar a los títulos de abogado, notario, o seguir la carrera diplomática.
- Bachiller en filosofía y letras para optar al título de doctor en filosofía o carrera diplomática.

- Bachiller en ciencias exactas. Para optar al título de ingeniero.
- Bachiller en ciencias naturales para optar al título de médico, etc.
- Bachiller en pedagogía para optar al título de maestro.

que se desarrolla para su mejor comprensión en la pauta de estudios que sigue:

"Plan de estudios de la alta escuela ("preparatoria," "secundaria" o como se llame, aunque convendría adoptar un solo nombre, el de enseñanza secundaria, por ejemplo, para que la uniformidad sea efectiva desde la denominación en adelante).

Cursos de 10 meses de 30 días cada uno, de 6 a 8 clases diarias de 50 minutos de duración. Materias que se enseñarán en el primer curso del primer año (obligatorio para todo estudiante): Gramática del idioma español; gramática general y retórica; historia patria; historia universal; geografía patria; geografía universal; aritmética.

Cultura física y algún otro ramo, alternados.

CURSO DE CIENCIAS EXACTAS.

Primer curso del segundo año—materias: Aritmética práctica y demostrada; álgebra; geometría y trigonometría; mecánica; física; idiomas inglés y francés.

Segundo curso del tercer año: Álgebra; trigonometría; agronomía; mecánica aplicada; cálculo (naciones de aplicación); idiomas inglés y francés.

Concluye con el bachillerato en ciencias exactas.

CURSO DE CIENCIAS NATURALES.

Primer curso del segundo año—materias: Botánica (primer curso); zoología (primer curso); mineralogía; química (primer curso); higiene y fisiología; idiomas inglés y francés.

Segundo curso del tercer año: Botánica (segundo curso); zoología (segundo curso); química (segundo curso); biología; nociones de bacteriología; idiomas inglés y francés.

Concluye con el bachillerato en ciencias naturales.

CURSO DE CIENCIAS POLÍTICAS Y SOCIALES.

Primer curso del segundo año—materias: Sociología general; derecho patrio usual; economía política (1 curso); historia comentada; retórica y composición; idiomas inglés y francés.

Segundo curso del tercer año: Prolegómenos del derecho; estudio de autores clásicos americanos; oratoria; economía política (2 curso); criminología y antropometría; idiomas inglés y francés.

Concluye con el bachillerato en ciencias políticas y sociales.

CURSO DE FILOSOFÍA Y LETRAS.

Primer curso del segundo año—materias: Historia de la filosofía; lógica y psicología; ética; estética; filología y tecnología; idiomas inglés y francés.

Segundo curso del tercer año: Filosofía positiva; comparación de las lenguas; raíces griegas y latinas; literatura en español y oratoria; biología y sociología; idiomas inglés y francés.

Concluye con el bachillerato en filosofía y letras.

CURSO DE CIENCIAS PEDAGÓGICAS.

Primer curso del segundo año—materias: Aritmética; álgebra elemental; geometría y dibujo; nociones de ciencias naturales; pedagogía (1 curso); idiomas inglés y francés; geografía patria, universal y nociones de cosmografía.

Segundo curso del tercer año: Pedagogía práctica y metodología; gramática española; estudio de la constitución política del país; psicología pedagógica; higiene y ejercicios físicos; caligrafía y nociones de teneduría de libros; idiomas inglés y francés.

Concluye con el bachillerato en ciencias pedagógicas.

CURSO DE RAMOS COMERCIALES.

Primer curso del segundo año—materias: Aritmética práctica comercial; nociones de álgebra; caligrafía y nociones de teneduría de libros; geografía comercial; economía política; idiomas inglés y francés.

Segundo curso del tercer año: Contabilidad práctica; cálculo de facturas; estenografía y mecanografía; nociones de derecho mercantil; nociones de derecho civil; idiomas inglés y francés.

Concluye con el bachillerato en ramos comerciales.

CURSO DE ARTES MECÁNICAS Y TELEGRAFÍA.

Primer curso del segundo año—materias: Caligrafía; dibujo lineal y natural; nociones de mecánica en general; electricidad y física en general; mecanografía; idiomas inglés y francés.

Segundo curso del tercer año: Nociones de construcción y arquitectura; cinemática; telegrafía práctica; electricidad (2 clases); radiotelegrafía; idiomas inglés y francés.

Concluye con el bachillerato en artes mecánicas y telegrafía.

Para dar a conocer el sistema en que baso mi reforma como prueba de la tesis, basta con el anterior plan de estudios, que puede amplificarse, siguiendo el mismo orden gradual y progresivo, según la escala enciclopédica de clasificación de las ciencias (adoptada por los sabios filósofos Comte y Spencer), para no apartarse de la lógica impuesta por la naturaleza misma de los estudios y no caer, por falta de método, en la misma o peor anarquía intelectual en que se hallan nuestras Repúblicas.

VIII.

No terminaré sin solicitar la venia de este Congreso para exponer algunas ideas complementarias que en ninguna ocasión más propicia que ésta pueden externarse para que sean como la recapitulación de cuanto llevo dicho, y si merecen tomarse en consideración, se establezcan como puntos que procurarán adoptar las naciones de América, puesto que ningún sacrificio ni esfuerzo extraordinario se les impone con la útil reforma de la enseñanza. En cambio se obtendrán innumerables ventajas con la uniformidad de plan para todas las repúblicas de este Continente.

Sean, entonces, mis conclusiones finales las que siguen:

1°. El fin primario de las "altas escuelas de instrucción," es la preparación individual del alumno a fin de que adquiera la aptitud necesaria para emprender estudios superiores en las escuelas profesionales o centros de perfección de una materia dada, o conjuntos de materias, como la abogacía, la notaría, la medicina, la cirugía la farmacia, la ingeniería, &c.

2°. El fin secundario de las "altas escuelas de instrucción" es la cultura colectiva de grupos de estudiantes, considerados como elementos constitutivos de la sociedad, para que ésta, en general, adquiera, un grado de adelanto que esté a la altura de la civilización que persigue como fin la misma sociedad humana, para cimentar su ulterior desarrollo mediante el triple, armónico, gradual y uniforme desenvolvimiento de las facultades físicas, morales e intelectuales de cada individuo.

3°. Deberá determinarse los cursos escolares en las "altas escuelas de instrucción" por los requisitos de admisión al colegio (escuelas especiales, facultativas o profesionales) por el grado de conocimientos adquiridos por el alumno conforme a los programas preestablecidos; entendiéndose que es indispensable sujetarse a los exámenes que la ley estatuye y a la aprobación correspondiente del jurado examinador.

4°. Se determinarán los cursos escolares, atendidas las exigencias de la vida industrial y civil, por la adopción de programas especiales que respondan, por su finalidad y métodos de enseñanza de las materias comprendidas dentro del mismo orden industrial y civil, al objeto particular que en aquel sentido se propone alcanzar la moderna civilización.

5°. Para conseguir los cuatro anteriores fines concomitantes y con ellos el fin último de la enseñanza, no existe más que un medio: la uniformidad del plan de estudios, calcado sobre el único principio científico en que se asienta la pedagogía, el que no admite más verdades que las comprobadas por la observación y la experiencia.

6°. Para poner en práctica el método indicado en la conclusión que precede, el camino más corto y más seguro es la aplicación del sistema positivista que establece la rigurosa escala de las ciencias, ascendiendo en el conocimiento de lo sencillo a lo complejo, de lo particular a lo general y empleando el razonamiento inductivo o deductivo, según los casos y la naturaleza de los fenómenos que se investiguen.

7°. El aprendizaje en la "alta escuela" no ha de ser obligatorio ni costeado por el Estado, sino voluntario y a expensas del interesado en estudiar, para que la instrucción no se desnaturalice con perjuicio del fin social que se busca.

8°. La "alta escuela," como curso intermedio de preparación, descansa en la "escuela primaria" y tiende hacia la "escuela profesional;" no puede ocupar otro lugar sin perder absolutamente su eficacia.

IX.

De intento he economizado las citas de todos de los autores que consulté para formular esta conferencia sin salir de los límites del tema, cuyo transcendental interés entraña nada menos que el porvenir de la enseñanza en las repúblicas de este Continente; pero en las aceptadas doctrinas de esos sabios procuré inspirarme para llevar a cima este humilde trabajo.

¿DEBERÍAN DEPENDER LAS UNIVERSIDADES Y COLEGIOS, SOSTENIDOS POR FONDOS PÚBLICOS, DE PODERES INDEPENDIENTES Y AUTÓNOMOS O DEBERÍAN ESTAR DIRECTAMENTE BAJO EL DOMINIO CENTRAL DEL ESTADO?

Por BERNABÉ SALGADO,

Director de la Revista "Nuevos Horizontes," Honduras.

La alta seriedad del problema y la transcendental importancia que reviste en su desarrollo a la luz de la Historia y de la Ciencia, en su adelanto moderno, hace meditar profundamente antes de engolfarse en los principios, teorías y leyes de las ciencias sociales y políticas, en que principalmente se basa y descansa tan importante tema.

Es obra fácil resolver desde luego, lo que dicen aquellas ciencias; pero su aplicación práctica en la vida de las Repúblicas americanas, a las cuales va principalmente dirigido este trabajo, es de compleja elucubración.

Pero antes, para dilucidar bien el terreno en que vamos a entrar, es necesario dar una mirada general y ligera al origen de la enseñanza, y principalmente a la superior; ver su marcha a través de las edades, sus vicisitudes y su progreso gradual y lento, en consonancia con la evolución humana.

La parte más avanzada de la sociedad humana, la más noble y pacífica, siempre ha sentido la imperiosa necesidad de intruírse, siempre ha buscado a su alrededor el lugar donde el ave sagrada de la Ciencia, se ha posado para guiar y enseñar a las almas sedientas, el Evangelio de la Verdad.

Porque la enseñanza es un don celeste, nacido con el alma humana, y esa alma es una mariposa ardiente por la luz, al rededor de la cual vuela, hasta encontrar el final de su efímera existencia y la libertad de su principio nómádico.

En los primitivos tiempos antiguos, la enseñanza marchó por el mundo, sola y libre; secreta la mayor parte del tiempo, y secreta y pública o mejor dicho, esotérica y exotérica, al final de la Edad Antigua, cuando brillaron en Grecia y Roma: Pitágoras, Sócrates, Platón, Aristóteles, Cicerón, Ammonio Saccas y Plotino, los principales maestros del mundo, cuyas doctrinas, esparcieron los sabios y filósofos, desde Atenas y Alejandría hasta las Galias.

En la Edad Media, con la enclaustración del pensamiento y de la ciencia, la enseñanza vivió esclava y oprimida, hasta que el Renacimiento y la Revolución Francesa, cortaron las cadenas que la esclavizaban y oprimían.

En la Edad Moderna, ya libre, cobró nuevos alientos y siguió su marcha animosa, protegida por el Estado, su verdadero padre y protector.

Y en la Edad Contemporánea, fuerte y robusta, busca más espacio y más libertad para señalar mejor los senderos luminosos del progreso humano; pero vive todavía a la

sombra del Estado y después de haber circundado el mundo, espera tranquila, sentada bajo el dosel de la democracia, el advenimiento de una nueva era de paz y de regeneración.

Después del triunfo del Cristianismo con Constantino el Grande, el clero concluyó de organizarse y principió a desviarse del inmortal sendero que le señaló el Gran Mesías, por culpa de su ambición desmedida de dominio absoluto en la humanidad. Para lograr su fin, empezó por apoderarse paulatinamente de toda la enseñanza, hasta enclaustrarla en sus conventos y tenerla toda bajo su completo dominio.

La enclaustración del pensamiento y de la ciencia, fué la vía dolorosa que atravesó la humanidad para llegar al Tabor de la idea, donde se transfiguró y, arrojando sus austeros cilicios, apareció como una alborada radiosa de la Edad Moderna, majestuosa y libre.

Este fué su renacimiento, que en el fondo oscuro de la Edad Media, la enseñanza antigua estuvo preparando lentamente y que como fuerza expansiva, de vez en cuando, convulsionaba el mundo, queriendo romper los diques que aprisionaban y paralizaban el progreso humano.

Dice Bunge que antes del Renacimiento, hubo otros dos renacimientos, a los cuales les hemos llamado mejor con el nombre de Conatos de Renacimiento, porque sólo eran la convulsión que ocasionaba aquella fuerza interna expansiva del progreso, que pugnaba por salir y abrirse paso libre para orientarse en la oscuridad de aquella edad.

El primer conato de Renacimiento fué en tiempo de Carlomagno, cuando este grande y célebre Emperador, fundó la Escuela pseudo-laica de Alcuino, a cuyo establecimiento acudían los letrados a consultar los puntos difíciles que encontraban en las ciencias.

Este fué el primer paso hacia la universidad, la cual, después de tres siglos, en el segundo conato de Renacimiento verificado en siglo XII, fué fundada, gracias a los esfuerzos de los nobles que reclamaron para ellos la enseñanza de las ciencias, y con ellos principió la exclaustración del pensamiento, y con su asociación se fundaron las primeras universidades.

De esta manera nacieron las universidades, como dije antes, de la lucha pacífica de los magnates y del clero, que reunidos estos, formaron el claustro docente y enseñaron a aquellos, por convenio mutuo, las ciencias de aquella época, no comprendiendo entonces el final político que entrañaba aquella medida, que les quitaba de las manos el vellocino de oro que tenían con la ciencia enclaustrada.

El Estado no tuvo ninguna ingerencia en aquel convenio ni lo tuvo durante los siglos que siguieron de aquella edad de los claustros y de opresión, hasta que la Revolución Francesa, con sus hombres colosales, deslindó los derechos y los deberes del Estado, puso la enseñanza a la sombra de la nación y la hizo universal y democrática.

Fué pues, la Revolución Francesa, la que hizo la completa democratización de la enseñanza y la Edad Moderna, la que la erigió como fundamento principal para la organización del Estado, tocándole a la Edad Contemporánea, su intensificación para ampliarla y promover el aumento del poder productivo de la nación.

Después de aquella magna y providencial revolución, el derecho público, señaló a la enseñanza un puesto especial entre los deberes precisos y las obligaciones forzosas del Estado, y desde entonces, sentada en el pedestal fecundo de la nación y sostenida por su aliento poderoso, vive diligente y crece rápida y frondosa, cumpliendo su alta misión, entrevista por aquellos grandes varones, precursores del reinado de la democracia.

Y buscando los orígenes de la enseñanza democrática moderna, encontramos que el primer impulso universal fué dado por el Gran Mesías, Jesús el Nazareno, cuando con su inmortal doctrina, anuló las diferencias de castas, como hijos de un solo Padre, ensalzó a los humildes, dignificó la pobreza y ordenó a sus apóstoles y a todos sus discípulos, doctos en la Ley y en las Escrituras, que enseñaran al pueblo el Camino

del Cielo, por que en la Ley y en las Escrituras, estaban comprendidas todas las bases morales y filosóficas de la enseñanza de aquella época y de todo el mundo.

Después de aquel gran impulso universal, siguieron otros efímeros, que, como ráfagas de luz alumbraron como el rayo, instantáneamente, la oscuridad de aquella noche brumosa, en que la humanidad dormía su sueño de crisálida, esperando el nuevo día para despertar en su inmortal Renacimiento.

Esa crisálida humana principió a moverse en el siglo XVII, cuando en las cátedras de derecho natural se discutió y se abogó por la enseñanza por el Estado, y se estremeció de júbilo como Juan el Precursor, en el vientre de su madre, al sentir la presencia del Gran Mesías, cuando las teorías jurídicas del siglo XVIII, en principal las de Rousseau y de Montesquieu, se posaron sobre ella, dándole más calor y vida, que al ser confirmadas por la Revolución Francesa, oyó de aquellos egregios varones el "Levántate" que hizo surgir de la muerte al Lázaro bíblico.

Desde aquel tiempo, la concepción moderna del Estado, impone la necesidad de una enseñanza popular y una misión de educación general y política.

Por estos deberes el Estado, debe ser insustituible en su misión docente, para su cultura y su progreso, y para su eficaz organización.

Y por la misma razón, el Estado tiene el deber preciso de intervenir en toda la enseñanza, en la cual se hace indispensable su actuación para su propia existencia y para evitar la propagación de doctrinas antisociales, y más especialmente, su intervención en los institutos particulares, los que a su vez, ganarían del Estado, un eficaz apoyo, cuando su enseñanza sea buena y eficiente, otorgándoles en recompensa, la facultad de extender grados y diplomas válidos en la nación.

Para completar la acción del Estado, creemos como creen muchos notables sabios y pedagogos, que del desarrollo de los planes y sistemas educativos de los institutos particulares y de los planes y sistemas adoptados por el Estado, cuyo estímulo mutuo será eficaz y fecundo, resultará de su constante empeño, una alta y progresista cultura, porque de la lucha de los diferentes sistemas de educación científica y social, antitéticos o similares, ha salido la cultura humana.

Y la lucha por la cultura, es tan necesaria a la humanidad, como la lucha por la vida para su existencia. Las dos son hermanas y solidarias, y en su marcha por el mundo, tienen necesidad de apoyarse mutuamente; porque a la mayor cultura se adunan, la riqueza y los mejores elementos de vida.

La primera es como el ángel celeste, se remonta y vuelve de la altura trayendo al desvalido y al ignorante, el pan sacrosanto del alma, con el cual, busca y encuentra el pan de nutrición del cuerpo; y dándole la mano cariñosa, asciende con él, para hacerle partícipe de su gloriosa existencia, formando una hermosa dualidad.

Esa hermosa dualidad sostiene el equilibrio humano, y al contemplarla con los ojos del alma, nos recuerda la eterna dualidad de las almas esposas del espiritualismo moderno, cuya leyenda de amor y de felicidad, la contó el vidente y sabio filósofo Manuel Swedemborg, con estas hermosas y simbólicas palabras:

Ví aparecer un carruaje que descendía de uno de los cielos más elevados. En este carruaje no descubrí al principio más que un ángel; pero a medida que se aproximaba, pude notar que eran dos. El carruaje brillaba a la distancia como un diamante, era tirado por caballos blancos como la nieve y los dos ángeles que estaban sentados en él tenían en sus manos dos palomas. Cuando se hubieron aproximado, comprendí que era una individualidad angélica. Y ellos me dijeron: "Somos una pareja conyugal, vivimos felices y benditos desde la primera edad de vuestro mundo. Desde ahora vivimos uno y otro, en la flor de una juventud perpetua y en una perenne alegría." Y mientras Él hablaba, también hacía lo mismo Ella por boca de su compañero.

Así comprendemos la armonía que resultará de esas dos grandes luchas por la vida y por la cultura, cuya intensidad se conoce en un Estado, por las atenciones que prodiga a su enseñanza, por los gastos que hace por ella, y por la vigilancia paternal que despliega en todas las esferas sociales, donde se imparte, sobre esta hermosa y vivificante institución docente.

El Renacimiento en Italia y la Reforma en Alemania, al revolver el mundo y alterar la marcha de la humanidad, hicieron nacer varias importantes escuelas literarias y científicas, que ayudaron a hacer la renovación total del Estado y de la enseñanza. El Romanticismo fué la primera escuela literaria que tuvo bastante influencia en la parte avanzada de la sociedad, principiando por romper "todo formulismo clásico y todo el convencionalismo teológico en literatura, idealizando la independencia de la forma y la altivez del carácter." El neo-humanismo se apropió de la libertad del humanismo filosófico y del romanticismo literario, y trasladándola al Estado y a la política, promovió la Revolución Francesa, siendo desde entonces, uno de los faros esplendentes que alumbran a la humanidad.

Todos estos movimientos sociales cambiaron completamente la forma y los métodos de la enseñanza, así como también su fondo, el que se trasformó de místico y dogmático que era, en político, altruista y democrático.

En la enseñanza superior, casi nada hay que decir con respecto a los colegios en la Edad Media, en que el clero erigió como principio docente, "La letra sólo con sangre entra," porque los métodos que había y los planes y sistemas de enseñanza, eran arbitrarios y solo imperaba la voluntad despótica y ciega de aquellos antiguos maestros medievales.

Y los colegios tuvieron su verdadera acepción, cuando las universidades se dividieron en facultades, haciendo que ellos también se dividieran, para responder mejor a su primordial misión, según se les dedique a la enseñanza general del Estado o a la enseñanza preparatoria de cada una de las facultades, llamados ahora generalmente liceos.

En toda la América Latina existe en los colegios la organización bajo el plan de la escuela única, que en mi humilde concepto, adolece de las siguientes deficiencias: Malgasta el tiempo en el estudio de materias inútiles para la profesión que se adopte; el estudiante, por las muchas materias que tiene que estudiar, no ahondará sus conocimientos en ninguna de ellas; y por último, el fin utilitario moderno, no asoma en ese sistema, y por eso, los hombres del presente, casi todos son superficiales y tímidos por causa de su defectuosa enseñanza, casi todos tienen altas aspiraciones; pero esas altas aspiraciones quedan dormidas y almacenadas en el espíritu y por eso, todos somos soñadores. Sólo tenemos que exceptuar de este concepto, a los raros que han seguido estudiando por sí mismos, que ávidos de cultura y de saber, se han separado de la senda de la generalidad, dando una nota alta en su evolución científica y social y señalándose meritoriamente hasta fuera de sus países.

Sin embargo, los colegios nacionales del Estado, responden bien a la enseñanza secundaria general; pero para la enseñanza secundaria preparatoria de las facultades, hay tanta deficiencia, que ya se hace la inmediata y necesaria separación en las diferentes secciones arriba mencionadas.

Con esas divisiones ganarían todos: el Estado en general y los individuos en particular, porque para el primero, se ampliarían sus programas y sus estudios, adaptándolos a las necesidades y a los anhelos de progreso para el porvenir, de la región donde están fundados; y para los segundos, su importancia será capital, porque las facultades no perderían el tiempo en enseñar materias que darán los Liceos o escuelas preparatorias, y su estudio será más fundamental, resultando mejores y más competentes profesionales.

Sólo tenemos que hacer una salvedad para las escuelas técnicas, cuya importante rama de la enseñanza secundaria, todavía está en embrión en Centro América y en la mayor parte de las Repúblicas latinoamericanas, a las cuales el Estado debe reglamentar y dedicar una atención especial para el incremento de la cultura y de la riqueza nacional, que tan grandes y beneficiosos servicios darán para el porvenir de América.

Veterinarios, agrónomos, electricistas, agricultores y mecánicos, hacen mucha falta en nuestras Repúblicas, y cuando haya un número considerable de ellos, la agricultura, la ganadería y las minas, que es el patrimonio general de estas naciones, darán toda su inexplorada riqueza, y los pueblos crecerán robustos y sus individuos disfrutarán de una envidiable comodidad y bienestar.

En cuanto a las universidades, podemos decir que tuvieron como precursoras a las llamadas con alguna propiedad, universidades antiguas, que existieron en Atenas, Roma, Alejandría y Beirut; los colegios de España, de Córdoba, Sevilla, Toledo y Salamanca, que después fueron famosas universidades; y las escuelas imperiales de Vespasiano.

El nombre de *universidad* se dió por primera vez, en el siglo XII, a la "corporación o hermandad de maestros y discípulos reunidos con el objeto de aprender y enseñar los conocimientos de las Artes y de las Ciencias;" pero este término, a los pocos años, se restringió a los estudios superiores, y más después, sólo se le dió a la corporación de estudiantes; y para la corporación de profesores, emplearon el nombre de colegio. Y sólo fué hasta en el siglo XIV, cuando se le dió el verdadero significado moderno que tiene ahora la universidad.

La primera universidad que apareció fué la Universidad de Bolonia, fundada en el segundo conato de Renacimiento, en el siglo XII, en cuyo tiempo principiaron a afluir muchos estudiantes de toda Europa, los que sufrieron y arrojaron multitud de vejaciones de sus habitantes, los Romañones. Estas vejaciones hicieron que los estudiantes estrecharan más sus vínculos de amistad y de cuerpo colegiado y fundaran, para defenderse y apoyarse mutuamente, los gremios de estudiantes.

La universidad era dirigida por un rector, que con los cónsules que tenían los estudiantes de cada nación, formaban el senado de la universidad, que presidía toda la corporación.

Poco tiempo después apareció la Universidad de París, que alcanzó gran fama cuando la erigieron en Universidad de las Facultades. Al mismo tiempo fueron fundadas otras muchas, que marcaron el sello de la nación a que pertenecían, siendo las principales: la de Oxford y la de Cambridge, en Inglaterra; la de Tolosa y Montpellier, en Francia; la de Praga y la de Nápoles, en Italia; la de Viena en Austria; la de Upsala en Suecia; y la de Lisboa en Portugal.

No hay que olvidar que las universidades marchan con las sociedades; son tan movibles como ellas y a cada tiempo y a cada movimiento social, mudan sus derroteros, alteran sus métodos y abandonan muchas de sus enseñanzas, las que después, vuelven a recoger y construirlas con nuevos elementos.

Así es la marcha de la humanidad y con ella la de la enseñanza: tropieza y cae a menudo como Anteo y como él, se levanta al instante, más fuerte y más rubusta.

Aquellas pobres universidades vivieron de las limosnas que les dieron los reyes y los magnates, y por eso la humanidad recuerda con eterno cariño a sus grandes benefactores y en principal, a los que le dieron el pan del espíritu con su altruismo, como a Juan de Sorbonne y a Walter Merton, fundadores de La Sorbona y del Instituto de Oxford.

En teoría y para la práctica de la República, los colegios y las universidades, sostenidos por fondos públicos, para su mejor marcha y para que su labor sea más fecunda, deben ser libres, marchar independientes del control directo y central del Estado y ser dirigidos por individuos o grupos autónomos.

Entonces, esas instituciones crecerán robustas y lozanas como el niño en el campo, a plenos pulmones; girarán en un terreno más amplio, y la emulación necesaria para el desarrollo intelectual, se hará sentir en todo su conjunto, dando a la nación el mejor fruto, apetecido por el alma colectiva del Estado.

La independencia y la descentralización de la enseñanza superior, es tan necesaria a la humanidad como la sangre para nuestra existencia; y así fué en toda la antigüedad, en que brillaron tanto las ciencias y las artes, alcanzando un desarrollo sorprendente, paralizadas después, por una centralización injusta y depresiva, que fué tan nefasta a la humanidad durante muchos siglos, como lo atestiguan un sinnúmero de mártires de la ciencia.

Los Estados jóvenes tienen por necesidad que poner toda la enseñanza bajo su dominio directo, para aprovecharse mejor de ella y porque la buena y la verdadera

enseñanza útil, necesita imperiosamente en esos Estados, del apoyo directo de la nación, como el pequeñuelo necesita del constante apoyo de su amorosa madre.

Además, esos Estados, están ensayando la manera de vivir mejor, de adaptarse al ambiente mundial, a las costumbres de la época y se están apropiando el adelanto de los otros Estados más antiguos, los que han tenido que luchar por largo tiempo, para adquirirlos.

Y proceden así, por instinto y por vía de imitación, y su éxito siempre dependerá, de que las imitaciones sean felices, para no retroceder y tener que volver a empezar por otra vía, más adecuada a su índole y temperamento nacional.

Esto ha sucedido casi siempre, a todas las Repúblicas Americanas, a pesar de su avance rápido en la cultura moderna. Sólo las más adelantadas, principian ahora, a poner en práctica muchos de los principios de la enseñanza libre en el Estado.

Y cuando el Gobierno, ya no tenga que ingerirse en todos esos Ramos, que deben estar bajo la dirección de individuos o grupos independientes y autónomos, la marcha de la nación hacia sus altos fines, no será tan embarazosa, tan pesada y tan minuciosa. Verá con claridad hasta los puntos más lejanos de su administración, y su progreso será más firme, más rápido y más concienzudo.

En cuanto a los colegios, de toda clase que sean, institutos normales, colegios nacionales generales y colegios preparatorios o liceos, ya es tiempo que el Estado los deje en completa libertad, y que ya no se preocupe más por ellos; ya estamos bastante adelantados, lo suficiente para que el Estado los aleje de su dirección central y disfruten de toda la libertad de acción, necesaria para que la enseñanza evolucione mejor y se establezca esa noble emulación de competencia intelectual para los directores, profesores y estudiantes, que los hará alcanzar las más altas cumbres de la Civilización humana moderna.

Como dije antes, hablo principalmente para los países latinoamericanos, donde los Estados tienen a su cargo un sinnúmero de institutos, que impiden a los buenos pedagogos implantar esos centros, que siempre han progresado mejor en manos particulares, como lo ha demostrado la experiencia escasa de aquellos países y la estadística lo afirma y habla más elocuentemente con números, en su favor.

En cuanto a las universidades, que atañen más directamente a la marcha educativa del Estado y son el exponente intelectual que representa la cultura y el grado de ilustración a que ha llegado el país, todavía se hace sentir la ingente necesidad de estar bajo el dominio directo y central del Estado.

Aquí en Honduras, allá por el año de 1846, un grupo de hombres ilustres, apoyados por el Gobierno del Dr. Don Juan Lindo, fundaron nuestra Universidad, que aun en medio de las convulsiones de un pueblo joven, no ha cesado de fungir, dando benéficos y prácticos resultados; pero si el Gobierno no la hubiera hecho suya, y puesto a su sombra bienhechora, después de aquel hermoso impulso de aquellos grandes hombres, se hubiera aniquilado su patriótica obra, aunque por necesidad nacional, tenía por fuerza que volver a surgir y renacer.

Esto mismo sucede en los demás Estados, en los cuales las Universidades, sólo con el apoyo del Gobierno, florecen y perduran, dando en su labor de adelanto social, los mejores resultados.

Hay que sentar el principio, que la mayor extensión de un Estado y el aumento de su población, no implica la fundación de una nueva universidad; máxime, cuando se toma como punto de vista, su actuación en la nación como centro directriz intelectual de toda ella.

En los Estados federales, como en la Argentina, en México, en Colombia, etc., la unidad científica y la unidad nacional, impone una sola universidad, y para los Estados que los componen, la creación de universidades correspondientes a la Universidad Central de la nación.

Tal vez espíritus mal dirigidos y el localismo, se opongan a esta importante unificación; pero ella debe ser así. En el porvenir se espera más: quizá más tarde los centros científicos de esta índole, abarquen más extensos dominios, ya no circunscritos por

uno o dos Estados, sino por un grupo étnico, que tienda su vista inteligente más allá de la existencia de esos Estados, que deben unirse a sus congéneres por razones múltiples y necesarias; pero ese porvenir hermoso, se verá cuando el adelanto sea uniforme en toda la América y las universidades subsistan por ellas mismas; cuando el interés humano sea sólo un constante anhelo de progreso, y la armonía de las naciones, sea más duradera y más cimentada en los verdaderos ideales de solidaridad humana.

En la organización general de las universidades, con insignificantes alteraciones, hay que notar, que siempre se ha hecho en nuestra Repúblicas, bajo una misma forma e idénticos planes, estudiando y adaptándose la organización de las universidades españolas y de otros países, en principal de las universidades alemanas. En todos los Estados hay un presidente, que todavía se llama en la mayor parte de ellos, rector de la universidad, y para la dirección de los diferentes ramos profesionales, de medicina, de derecho, de ingeniería, etc., existen decanos, que fungen por tiempo determinado, elegidos, o por el gobierno o por los profesionales y cursantes de cada ramo.

En cuanto a su actuación en la marcha del Estado, rara vez el gobierno consulta a estas sabias y útiles instituciones; todavía la infalibilidad se estila en todos los ramos del Estado; sin embargo, los buenos códigos de leyes actuales, han suplido y allanado en parte, las dificultades que se han presentado, porque los profesionales, solo en secreto y al oído, en esos casos, externan su opinión, debiendo hacerlo en público, por la prensa o por cualquiera de los medios legales.

Por eso, los problemas legislativos y económicos del Estado, como la parte activa que pudiera tomar la Universidad en la vida social y política como orientación moderna, se hallan sin expansión y muy restringidos; porque todavía no estamos bastante adelantados, pertenecemos a pueblos jóvenes, y nuestros ímpetus vehementes y pasionales, no nos dejan juzgar con imparcialidad esos problemas y pueden perturbar la marcha armónica de la sociedad y de la nación.

Y para caminar con la civilización moderna, en vista de nuestro adelanto social, los Colegios y las universidades, sostenidos con fondos públicos, que actualmente están bajo el dominio central del Estado, tienen que sufrir una intensa reforma, y por las múltiples razones que hemos externado antes, en el trascurso de la disertación, apoyadas en los más amplios y liberales principios de las ciencias sociales y políticas, y teniendo a la vista, como dije antes, el progreso alcanzado en las Repúblicas Americanas, podemos sacar en conclusión, del estudio del tema que hemos esbozado, los dos siguientes corolarios:

Primero. Los colegios, sostenidos con fondos públicos, ya es tiempo de que dependan de poderes independientes y autónomos; exceptuando a las escuelas técnicas, que tienen que seguir por ahora, bajo el dominio central del Estado.

Segundo. Las universidades, todavía deben estar, como las escuelas técnicas, directamente bajo el dominio central del Estado.

ORGANIZACIÓN Y DESARROLLO DE UN PLAN PARA EL CAMBIO SISTEMÁTICO DE ESTUDIANTES Y PROFESORES ENTRE LAS UNIVERSIDADES DE LOS DISTINTOS PAÍSES AMERICANOS. PLAN PARA OBTENER UN RECONOCIMIENTO MUTUO DE LOS GRADOS TÉCNICOS Y PROFESIONALES CONCEDIDOS POR LAS INSTITUCIONES DE PRIMERA CLASE EN LAS DISTINTAS REPÚBLICAS AMERICANAS.

Por SANTIAGO KEY-AYALA,

Vocal del Consejo Nacional de Instrucción de Venezuela.

Eliminada, por innecesaria, una exposición de las ventajas que reportarán las naciones de América del intercambio de profesores, resta como tema de estudio el análisis rápido de las condiciones en que tal intercambio puede alcanzar la mayor
cia.

Un intercambio, para ser activo y fecundo, presupone diversidad suficiente en las condiciones de los países que lo efectúan. Es de rigor que lo exportable por unos sea importable por otros. Por tal principio se rige el intercambio mercantil, y por él ha de guiarse el intercambio de profesores. El máximo de eficacia se obtendrá cuando el profesor que llegue traiga conocimientos o métodos capaces de colmar vacíos, o deficiencias, en los conocimientos y en los métodos del país que lo recibe. La diversidad de adelanto pedagógico, científico e industrial, de clima, y de otros factores, existente entre las Repúblicas Americanas, está determinada lo bastante para que pueda efectuarse con grande extensión y abundante fruto el intercambio de profesores.

En el tráfico mercantil, la oferta y la demanda, cuando obran naturalmente, sin perturbaciones extrañas ni modificaciones artificiales, tienden a la más conveniente distribución de los productos. El consumidor, juez de sus propias necesidades, decide ante las mil seducciones de la oferta. Diversas instituciones, además, favorecen el mutuo conocimiento de productores y consumidores y, en resolución, el cambio adecuado de productos.

Efectuado en pequeña escala el canje de profesores, y sin plan o programa, aunque dé resultados apreciables en detalle, no puede producirlos de conjunto. Se anda a ciegas y, al entregarse a las circunstancias eventuales que determinan el traslado de un profesor, se corre con toda probabilidad el riesgo de que el país de destino no reciba la enseñanza más útil por más necesaria, y de que el profesor, por su parte, no alcance la eficacia máxima que en otro país determinado tendrían sus lecciones. En términos más concretos, circunstancias del momento pueden hacer que un agrónomo vaya a donde sería mucho más útil un profesor de metalurgia, cuando en otra República las lecciones del agrónomo serían de la mayor importancia. También, la desigualdad de riqueza entre los miembros de la comunidad internacional americana produciría naturalmente desigual repartición de las ventajas del intercambio, que tendería a ser de mayor actividad entre los de mayores recursos, y a circuncribirse, por una especie de selección, a los países de desarrollo equivalente. De modo que el intercambio de profesores sería más activo entre los países más adelantados, menor entre los más incipientes y menor aún entre los del primer grupo y los del segundo.

Parece, pues, aconsejable un plan general que asegure ventajas para todos y permita a las naciones más atrasadas en cualquier orden, llegar más rápidamente que por su solo esfuerzo a un grado de progreso más satisfactorio.

Tal desiderátum exige una organización de conjunto, y ésta reclama una institución central, cuyas funciones serían poner en relación rápida, cómoda y frecuente a todos los miembros de la organización. Cada República americana desempeñaría ante ella el papel de productor y a la vez, el de consumidor. Haría conocer sus profesores disponibles, sus necesidades y sus deseos. Haría conocer también cuantos datos pudiesen contribuir al éxito del canje. Para darle de una vez sanción práctica al sistema, se fijaría por compromiso un mínimo de cambio anual de profesores, igual para todos los miembros de la organización, mínimo que se determinaría teniendo en cuenta los recursos de las Repúblicas menos ricas. A la Oficina central podrían enviarse indicaciones sobre materias a las cuales convenga extender el intercambio de profesores y la Oficina pondría regularmente los datos y las indicaciones a disposición de todos los países interesados. Obtenido un acuerdo, por su mediación, se concluirían de país a país los convenios más adecuados.

Si han quedado bien establecidas las ventajas de una oficina central, ésta puede fundarse como institución independiente, con un solo objeto, o ser una sección de la Oficina de la Unión Panamericana. A lo menos para inaugurar el sistema, parece preferible utilizar una organización en plena actividad, que dispone de cuantiosos recursos de información y tiene, en las Comisiones Panamericanas, órganos de contacto directo con todas las Repúblicas. La adopción de esta Oficina permitiría poner inmediatamente en actividad el plan de intercambio. Bastaría que el Congreso

Científico Panamericano recomendase el proyecto, para que el Consejo Directivo de la Unión quedase autorizado a dirigirse, por medio de sus propios miembros, a todos los países representados, exponiendo las líneas generales del proyecto y ofreciendo los servicios de la Oficina. Si, como es de esperarse, los Gobiernos interesados aceptan el ofrecimiento, procederán desde luego a formular sus indicaciones ante la Oficina de la Unión, y ello significará la inmediata actividad del mecanismo. El mero juego de la organización será su propio estimulante y su desarrollo queda confiado a la misma experiencia benéfica del intercambio y al celo del Consejo Directivo de la Unión Panamericana. En tales condiciones, puede asegurarse que adquirirá extensión e intensidad en un porvenir muy próximo.

El intercambio de estudiantes quedaría ceñido a los mismos principios, con lineamientos más sencillos. Se fijaría también un *mínimum* para este canje, de acuerdo con las circunstancias de los países de menores recursos. Cada una de las Repúblicas informaría a la oficina central sobre el número, la clase y demás condiciones de las becas por ella ofrecidas, y sobre las asignaturas que desee para sus estudiantes, concluyéndose los convenios de país a país, con vista de los datos centralizados en la Oficina de la Unión.

Si el intercambio de profesores y estudiantes ofrece facilidades y ventajas manifiestas que no pueden encontrar mayores obstáculos, el deseado reconocimiento mutuo de los grados técnicos y profesionales en las Repúblicas americanas presenta dificultades que pueden retardar su adopción, y en efecto la retardan. Ello obedece a una diferencia esencial de condiciones entre los dos canjes. Mientras que la idea del intercambio de profesores y estudiantes se rige de modo inmediato por ideales de propagación de la cultura, comunes a todos los países interesados y orientados por tanto en un sólo sentido, el canje de títulos se rige de modo inmediato y esencial por leyes e intereses económicos. El reconocimiento de títulos extranjeros supone un fin práctico: la traslación del profesional extranjero al territorio nacional con ánimo de ejercer en él su profesión. Es el interés económico del profesional lo que en primer término y fundamentalmente se tiene en mira, y por tanto, el asunto adquiere el aspecto de una cuestión económica, con absoluta subordinación del aspecto cultural. De hecho, por la naturaleza de las cosas, el profesional extranjero, que llega, es un competidor del nativo. El reconocimiento mutuo significa así un convenio de reciprocidad económica. Mas, para que la reciprocidad sea real y no aparente o ilusoria, es preciso que las circunstancias de los países contratantes sean equivalentes desde el punto de vista económico. En el caso concreto, multitud de circunstancias pueden hacer que para un país dado el reconocimiento en general de títulos extranjeros sea fuente, no ya de ventajas, antes bien de dificultades y riesgos. Un examen rápido nos permite establecer que para regir por un plan general el canje de títulos entre las Repúblicas americanas, precisa que las condiciones en que vive un orden cualquiera de profesionales en cualquiera de los países de la Unión sea comparable con las condiciones del mismo orden de profesionales en las demás Repúblicas. De no comprobarse esta equivalencia—y tal es el caso—un plan de conjunto encontrará obstáculos a su adopción general, y será más práctico dejar para convenios parciales y bien determinados, el desarrollo de un sistema de canje de títulos. Algunas ilustraciones completarán este esbozo.

De las profesiones cuyos títulos pueden ser objeto de reconocimiento, unas están subordinadas en todos los países a disposiciones legales que imponen el título como condición para el ejercicio. Otras, lo están sólo en algunos países. Para ciertas profesiones, el título posee apenas carácter honorario y decorativo, y el reconocimiento de éste carece de inmediato interés económico. El problema adquiere su importancia máxima cuando se trata de profesiones como la del médico y el abogado, a las que rodea la ley de precauciones especiales. Exigidos a los nativos ciertos conocimientos y aptitudes para el ejercicio de una profesión que el Estado considera de

orden público, no resultaría justo ni lógico exigir menos al diplomado extranjero, aun en el caso de reconocimiento de su título. Si el país de destino impone requisitos no exigidos en el país de origen, el título puede quedar reconocido en cuanto satisfaga las condiciones comunes a uno y otro, y el interesado, admitido a completar las que reclama el país de destino. Así quedó acordado entre las Repúblicas bolivianas en el Convenio sobre canje de títulos concluido en el Primer Congreso Boliviano (Caracas, 1911).

Aquella misma diversidad de condiciones entre las Repúblicas americanas que es desde luego la base más firme para establecer la conveniencia del intercambio de profesores y estudiantes, resulta en general inconveniente para el canje amplio de títulos profesionales. Algunos países, donde, por inclinación del carácter nacional o por desviación de las actividades industriales, agrícolas o mercantiles, hay plétora en todas o en algunas profesiones liberales, pueden temer, con fundamento, que el reconocimiento de títulos extranjeros, en principio, conduzca a un agravamiento de la plétora, con serio perjuicio económico y social. Cierto es que el reconocimiento puede conducir también al realce del nivel profesional del país de destino por la acción de profesionales mejor preparados que aporten conocimientos más perfectos. Se arguye, sin embargo, que en tesis general, emigran, no los mejores preparados, a los cuales sonrre el éxito en su país nativo, sino los fracasados, vencidos en la lucha con los aptos. Ante casos tales, las pruebas de revalidación constituyen una garantía para el país de destino.

En resolución, parece que no puede aspirarse a un reconocimiento inmediato y general de los títulos técnicos y profesionales en las Repúblicas americanas y que este desiderátum ha de lograrse paulatinamente, por convenios parciales, como los ya celebrados. No obstante, puede acelerarse el proceso: (1°) Por el conocimiento, en cada República americana, de los requisitos exigidos por cada una de las demás para la expedición de títulos y su validez ante el Estado; (2°), por el conocimiento, asimismo, de las condiciones sociales y económicas en que se desenvuelve el ejercicio de cada profesión en todos los países interesados, y de las condiciones económicas de los mismos profesionales. A tales efectos, parece recomendable la creación de una Comisión Internacional permanente, donde estén representadas las diversas profesiones, y comisiones nacionales en todas las Repúblicas americanas. Cada comisión nacional haría los estudios concernientes a su propio país, y los enviaría a la comisión internacional, que los haría conocer de las demás comisiones. Se comunicaría a la central todo cambio apreciable en las condiciones profesionales y se presentarían informes anuales de recapitulación. La comisión central presentaría un informe de conjunto al próximo Congreso Científico Panamericano con exposición de los adelantos obtenidos en el reconocimiento mutuo de títulos, y las debidas conclusiones y recomendaciones. Estas pudieran luego, ser objeto de estudio y moción en las futuras Conferencias Panamericanas.

EXCHANGE OF PROFESSORS AND STUDENTS BETWEEN THE UNIVERSITIES OF THE UNITED STATES AND CENTRAL AND SOUTH AMERICA.

By M. DE OLIVEIRA LIMA,

Envoy Extraordinary and Minister Plenipotentiary from Brazil.

This subject is deeply interesting to all Americas and I may deal with it so much more at liberty, as I am not myself an exchange professor. I was appointed professor of South American history and economics at Harvard College for one year, and I am not representing there any Brazilian institution of learning.

Of course, I consider of great advantage for every one of the American countries a better mutual knowledge of their language, history, and laws, and, although it is perfectly possible to obtain such knowledge from foreigners, who are even apt to be

more impartial in their criticism, at least history and law ought to be explained in a clearer way by those who belong to the nation under discussion and who are identified with its institutions. Mr. Drago, for instance, would certainly comment upon Argentine law and Mr. Ruy Barbosa upon Brazilian law beyond any possible competition from a foreign professor.

Foreign professors being so more conveniently restricted to subjects of their own nationalities, it is, however, indispensable: First, that the exchange professors possess a good knowledge of the language of the countries whereto they are going; no Brazilian students to speak of would understand a course of lectures made in English, as no American students, with very few exceptions, would understand a course of lectures made in Portuguese; second, that the aim proposed by the professor in his pedagogic mission be purely academic or intellectual, not political or economical.

To try and foster closer commercial relations under cover of pure science would be detrimental to the prestige of the professor who would by chance attempt to do it. His students' respect for him could not but diminish. So professors must be chosen with the utmost care. A bad one would increase prejudices and prevent for years the cordial understanding in view. One can not be too particular regarding his competence, his morality, and his disinterestedness.

The system, however, would not be complete without its second and more important feature; that is, the exchange of students. Students have very little to gain by a hurried visit in groups to another country and its institutions of learning. The most profitable visits are the individual ones—the bourses de voyage, as there are in France and other countries. Amongst the books produced by these French boursiers we find some of the most reliable and best informed about foreign nations. It is enough to quote Pierre Denis's book on Brazil and Tonnelat's book on German Expansion in Asia, Africa, and America.

In order to acquire a more efficient knowledge of the peoples, institutions, and ideals of the nations with which they are so put in contact the student must start with some acquaintance with the matter, imparted by their professors at home. In this respect the United States are far ahead of the Latin-American countries at least of Brazil, where no course exists of American history and American economics. Only incidentally, in the law faculties, there are references to American public law and federal organization.

One difficulty for the exchange lies in the fact that there can be no real reciprocity; the Latin-American students may derive good profit from their stay in American universities, but the advantages don't correspond in Latin-American universities for American students who may go there.

ENSEÑANZA PRÁCTICA DE LA INGENIERÍA.

Por JUAN MONTEVERDE,

Profesor de la Facultad de Matemáticas de Montevideo.

I.

En los países europeos se ha reconocido la necesidad de dar una tendencia más práctica a la enseñanza de los ingenieros: desde hace más de veinte años se está discutiendo, entre los profesores de matemáticas y los ingenieros, la cuestión de la enseñanza teórica de los programas de ingeniería; y en los últimos Congresos de enseñanza de las matemáticas han figurado varios trabajos sobre ese tema, que fueron discutidos ampliamente, sobre todo en el último, reunido en París en abril de 1914.

Ha venido acentuándose la opinión de los profesores de las escuelas técnicas en favor de la reducción de la enseñanza teórica de las escuelas de ingeniería, para dar más importancia a los ejercicios prácticos, a los trabajos de laboratorio y a las aplicaciones profesionales.

Aún en los países latinos como Francia e Italia, en los cuales una larga y honrosa tradición mantenía la enseñanza de las matemáticas puras en un pie de gran importancia, en relación con los estudios de aplicación de ingeniería, se reconoció la necesidad de limitar la cultura matemática de los ingenieros a lo necesario para el estudio de la física, de la mecánica y de sus aplicaciones, dando mayor importancia a los ejercicios prácticos y de aplicación que a las altas teorías científicas, en su concepto de ciencia pura, que se consideran más propias para el sabio de gabinete que para el técnico que aplica las ciencias a las cuestiones profesionales, que se resuelven con criterio de aproximación impuesto por condiciones prácticas y económicas lejanas del rigor científico.

Nadie que conozca la acción que debe desarrollar un ingeniero en las sociedades modernas puede desconocer la necesidad de que tenga una suficiente cultura científica como base de sus estudios profesionales; y seguramente nada exageró Le Chatelier al decir que un ingeniero debe conocer el doble de las matemáticas que realmente necesita en su práctica profesional. Pero las matemáticas que realmente aplica el ingeniero raras veces exceden de las matemáticas elementales, de la geometría analítica y de los elementos de cálculo infinitesimal aún en las más importantes cuestiones que como técnico tiene que estudiar. No hay, por lo tanto, porque exagerar los estudios de ciencia pura del ingeniero, en detrimento de los conocimientos que realmente necesita aplicar continuamente en su práctica profesional.

Todo técnico que tenga una larga práctica de su profesión, sabe perfectamente lo excepcional que es aplicar los conocimientos de la ciencia pura en sus teorías elevadas, por importantes que sean los estudios que demande un proyecto. En cambio se habrá encontrado con frecuencia jóvenes ingenieros, muy bien preparados en los estudios teóricos del análisis infinitesimal, de la física matemática y de la mecánica racional, que tropezaban en cuestiones de aplicación práctica de las matemáticas elementales.

Muchas discusiones tuvieron lugar en Europa, principalmente en Alemania, Francia e Italia, entre matemáticos e ingenieros, antes de conseguir reformar la enseñanza teórica de los ingenieros, y si bien mucho se ha hecho, en el sentido de darle su verdadera tendencia de aplicación, aún está a estudio esta cuestión, pues figura entre los temas a tratarse en futuros congresos, a pesar de haber sido ya tratada y discutida en los últimos de enseñanza de las matemáticas realizados en Cambridge en 1908, y en París en 1914.

La enseñanza teórica, para algunas especialidades de la ingeniería, tiene mayor o menor importancia según los países y según la actividad técnica que los ingenieros deban desarrollar. Los grandes países europeos y los Estados Unidos tienen grandes industrias, proveen al mundo entero de las máquinas, aparatos, instrumentos y productos variados de sus grandes fábricas: esos países necesitan hombres de estudio que cultiven la ciencia, para aplicarla a los perfeccionamientos de sus máquinas y procedimientos industriales, necesitan ingenieros con la preparación científica suficiente para comprender y aplicar esos perfeccionamientos, y también para idearlos y demostrar prácticamente las ventajas de su realización. Se justifica por lo tanto que en los Estados Unidos y en los países industriales europeos, haya necesidad de instruir ingenieros que estudien a fondo las teorías científicas para avanzar las ciencias y sus aplicaciones industriales.

No debe confundirse la acción del sabio investigador, sea o no ingeniero, que estudia las teorías científicas y las hace adelantar con sus propios trabajos, con el ingeniero especialista que aplica esas teorías a la construcción y al perfeccionamiento de las máquinas y procedimientos que emplea la industria en sus fábricas y miles de aplica-

ciones; y ninguno de los dos debe confundirse con el ingeniero que no construye ni mejora esas máquinas y que sólo se limita a estudiar su instalación y su más económica y apropiada aplicación.

Las condiciones de los países centro y sudamericanos y sus necesidades, sólo exigen, y exigirán por muchos años, la acción del ingeniero que aplica procedimientos, motores y máquinas importadas de los países que son nuestros maestros y nuestros guías en su aplicación industrial práctica.

La acción de nuestros ingenieros es, pues, mucho más limitada que en Europa y Norte América, donde la gran industria tiene inmensa importancia: las necesidades de nuestros países en materia de ingeniería, están limitadas a muy pocos y elementales ramos industriales, a diversos servicios públicos, y principalmente a las obras públicas.

Ahora bien, para estudiar un proyecto de fábrica, de explotación industrial o de cualquier obra pública o municipal, no se requiere absolutamente más matemáticas superiores que las que figuran en los tratados elementales de Cálculo Infinitesimal que generalmente se estudian en dos semestres en las escuelas técnicas superiores de Europa y Norte América.

Evitemos que nuestros alumnos de ingeniería gasten tiempo y energías a pura pérdida y que tanto necesitan para estudiar y ejercitar bien las matemáticas que deben aplicar continuamente; dejémoles tiempo para que hagan sus prácticas de laboratorio y sobre el terreno, que son tan indispensables como lo son las clínicas para el futuro médico.

II.

Una larga experiencia, un estudio detenido de los inconvenientes que ofrecen los estudios teóricos exagerados, la necesidad de disponer del tiempo indispensable para dar el debido desarrollo a los ejercicios y a las prácticas que exige la moderna enseñanza, la extensión y diversidad de las asignaturas de aplicación profesional (que también requieren una enseñanza experimental), han obligado a modificar los planes de estudios, los programas y los métodos de enseñanza de las escuelas técnicas superiores.

Si actualmente no se concibe una buena escuela de medicina sin laboratorios, institutos y clínicas, tampoco es admisible una buena escuela de ingeniería sin laboratorios e institutos de Física general, de Química aplicada, de Mineralogía, de Mecánica general, de Máquinas, de Electrotécnica, de Hidráulica, de Ensayo de Materiales, etc., colecciones de modelos referentes a las máquinas y procedimientos empleados en la diversas partes de la construcción; y si el futuro médico debe hacer su práctica en los hospitales, el futuro ingeniero debe hacer su práctica sobre el terreno, aprendiendo el uso y haciendo aplicación de los instrumentos para levantar los planos y tomar todos los datos que necesita, saberlos anotar, emplearlos en los cálculos y representarlos gráficamente, tal como en la realidad ocurre para el estudio y elaboración de un proyecto.

Esta es la enseñanza moderna que debe darse a los alumnos de ingeniería, que responde a formar hombres que, teniendo la base científica necesaria,—bien asimilada y en condiciones de saberla aplicar a conciencia,—los prepare, como lo necesitan los que deben operar sobre el terreno, para que sepan utilizar con la debida exactitud los elementos que requiere el estudio de un proyecto, sean capaces de dirigir prácticamente y dar instrucciones a los que sobre el terreno trabajan, conozcan los materiales, máquinas y procedimientos que se emplean en la construcción, apreciando a conciencia su más apropiada y más económica aplicación en cada caso.

Todo lo que no sea necesario y que se aumente en la enseñanza teórica, será perjudicial, porque restará tiempo y energías que con más provecho serían empleados en la enseñanza realmente fundamental, de verdadera utilidad y aplicación. No son los ingenieros de bufete, ni los que hayan aprendido de memoria más teorías de matemáticas superiores, los que son más capaces para resolver los problemas técnicos que ofrece la práctica profesional.

No hay que olvidar, sin embargo, que las experiencias y prácticas de escuela versan siempre sobre cuestiones que se estudian individualmente separándolas de sus concomitantes, o son reducción de hechos o procedimientos que se encuentran o usan en la práctica profesional, ligados en mayor o menor grado con otros de que se precinde para facilitar la enseñanza o por imposibilidad de reproducirlos.

Así por ejemplo, valiéndose de modelos, se podrá estudiar individualmente, las distintas máquinas que constituyen un molino moderno de trigo, pero no será posible ver funcionar en la escuela el organismo completo del molino, tal como funciona en la realidad, con todas sus múltiples operaciones. Se tomarán los datos en el terreno para el estudio y la formación de un proyecto de una obra pública, tan completo como se quiera, pero la parte más interesante, la idea transformada en hecho, el procedimiento de construcción en sus distintas fases, la obra en fin, no podrá reproducirse en la escuela.

El libro, la lámina y el modelo dan al alumno, en menor o mayor grado, noción de las cosas, pero en ningún caso pueden dar idea tan exacta como las cosas mismas; por eso es que entre los medios de enseñanza de las buenas escuelas profesionales, figuran las visitas y excursiones de instrucción, que permiten a los alumnos conocer las cosas tales como son en la realidad: es así que los futuros profesionales técnicos pueden adquirir en la propia escuela ideas exactas sobre las cosas que estudien y familiarizarse con los procedimientos en que más tarde deben intervenir: de este modo, la transición entre los ejercicios y prácticas de la Escuela y los procedimientos profesionales es menor, ganando la Sociedad, el Estado y el individuo, pues se disminuyen los errores de la inexperiencia profesional.

En los Estados Unidos la enseñanza de la ingeniería en sus buenas escuelas técnicas es suficientemente práctica, y aunque no sucede lo mismo con los demás países de América, en los últimos diez años algunos de ellos han hecho importantes reformas en sus métodos de enseñanza: han creado laboratorios e institutos para los estudios experimentales y de aplicación, han establecido las prácticas sobre el terreno y las excursiones de estudio. En mi país, el Uruguay, como anexas a las clases de ingeniería, se han instalado los institutos de ensayo de materiales, de máquinas, de física técnica y de electrotécnica, y, tan pronto funcionen todos, habrá que adoptar programas y métodos más apropiados a la enseñanza profesional moderna y especializada en ciertos ramos, de acuerdo con las necesidades del país. Otros países, se han limitado a mejorar su material de enseñanza y sus programas y métodos.

Sería muy conveniente que esos adelantos de la enseñanza técnica americana fueran difundidos entre nuestros países, por medio de publicaciones, y mejor por medio de visitas de excursión que hicieran los profesores y alumnos más adelantados de unos y otros países, tal como han comenzado a realizarlo los argentinos y uruguayos. Estas visitas de excursión podrían, además, motivar estudios técnicos de algunas obras importantes, y la recopilación de datos técnicos locales, muy útiles para ampliar los que figuran en las obras de consulta extranjeras.

Como entre los temas de estudio de esta Sección figura el intercambio de profesores y alumnos entre los países americanos, es de esperar que se llegue a una solución práctica en la utilización de ese medio de perfeccionamiento de la enseñanza técnica.

III.

La instrucción técnica de los ingenieros, sin embargo, no sería suficiente, aun con los estudios de laboratorio, las prácticas de escuela sobre el terreno y las excursiones: en realidad esa instrucción práctica, como preparación técnica, no equivale a la que reciben en las clínicas de hospitales los estudiantes de medicina para formarse médicos. Me refiero a estudios de medicina seriamente organizados y a buenas clínicas.

En los Estados Unidos los ingenieros tienen una acción tan vasta como en los grandes países industriales europeos; en el resto de América la actividad de los ingenieros se relaciona principalmente con las obras públicas y los servicios municipales.

La acción mucho más compleja de los ingenieros de los Estados Unidos obliga a la creación de algunos estudios teóricos y de aplicación más elevados y más especializados que en los países centro y sudamericanos, para formar hombres capaces de adelantar las ciencias y perfeccionar las industrias, manteniendo o superando el nivel que alcancen las similares europeas. Habrá por lo tanto en los Estados Unidos ramas de estudios superiores, con laboratorios e institutos especiales que no tendrían razón de ser en los demás países americanos.

Pero la preparación de los ingenieros, cualquiera que sea su especialidad y su campo de actividad, tiene que subordinarse a un principio invariable en cuanto a su instrucción técnica: salvo los pocos que se dedican a estudios de ciencia pura y a investigaciones de laboratorio para avanzar la ciencia y sus aplicaciones, los demás ingenieros deben recibir, además de la enseñanza teórica y práctica de la escuela, una instrucción de verdadera aplicación profesional: no basta para esta instrucción la enseñanza de la escuela por buena y por práctica que sea en sus métodos y procedimientos, por variados y de aplicación que sean los trabajos de laboratorio y sobre el terreno, mientras éstos se mantengan como ejercicios escolares.

La acción del ingeniero en su práctica profesional es con frecuencia de gran responsabilidad personal por los grandes intereses que se le confían como técnico: el éxito de muchas empresas, los resultados de la inversión de grandes capitales, dependen en gran parte de su capacidad técnica. La experiencia directa desempeña el papel principal en la buena aplicación de los conocimientos científicos del ingeniero, y esa experiencia solo se adquiere en las obras o en las fábricas o talleres, sobre todo en lo que se refiere a la faz económica de la acción profesional, que no se tiene en cuenta en la enseñanza práctica de la escuela.

Por lo tanto, los ingenieros que se dedican a las industrias, conviene que en los últimos años de sus estudios, permanezcan anualmente durante algunas semanas en buenos talleres de la especialidad de sus cursos, para darse cuenta de las diversas instalaciones de aquéllos, de la organización de su personal y de su funcionamiento técnico y económico; podrá así completar su preparación de escuela con un concepto claro del conjunto del organismo de la fábrica y de las condiciones que prácticamente requiere su buen funcionamiento. Las ventajas de esta enseñanza práctica complementaria serían de gran importancia para los nuevos ingenieros, pues podrían iniciar con más seguridad de éxito su profesión, ahorrando el tiempo de aprendizaje y los errores de la inexperiencia profesional.

Los ingenieros que aspiran a los servicios de obras públicas, además de los estudios teóricos y prácticos de las asignaturas especiales hechos con la debida extensión—una vez terminados sus estudios—podrían ser adscritos como ingenieros ayudantes a las oficinas técnicas del Estado y a comisiones oficiales de estudios o trabajos, un par de años, antes de recibir su diploma profesional de ingeniero de obras públicas, con indicación de la especialidad que hubieran elegido para sus estudios. Este sistema de promoción de los ingenieros conviene en los países donde haya suficiente personal técnico como para hacer una selección para los servicios del Estado, y obliga a éste, en cierto modo, a formar un cuerpo especial técnico, con su escalafón, como sucede en la mayor parte de los países europeos; no parece aplicable actualmente este sistema a los países centro y sud americanos.

En general, los países americanos no cuentan con el suficiente número de ingenieros para los servicios técnicos municipales y de obras públicas, por lo cual el sistema aplicable para complementar la enseñanza profesional de la escuela, sería semejante al indicado para los ingenieros que se dedican a las industrias. Los alumnos dedicarían los dos últimos meses de cada año, en los tres finales de sus estudios, a las prácticas profesionales en las obras en ejecución, tomando intervención en las partes más

instructivas, interpretando los planos, replanteando los diversos elementos, comentando las prescripciones relativas a los materiales, su colocación en obra, procedimientos de construcción, etc.

No siendo de importancia las obras, o bien subordinando la práctica profesional a otro criterio, en las clases de aplicación, el profesor podría proponer estudio de proyectos de obras reales de utilidad reconocida, coordinando esos ejercicios de modo que los mismos alumnos los continuaran en los tres años sucesivos, partiendo de los datos topográficos que tomarían en el primero, como ejercicios de topografía, utilizándolos en los dos subsiguientes para estudiar proyectos de carreteras, ferrocarriles, obras hidráulicas, sanitarias, etc. Esto debe hacerse, arreglando los cursos de los tres últimos años, de manera que puedan los alumnos tener una permanencia de un par de meses seguidos en el terreno. Adquirirían así los alumnos una buena práctica, conocerían prácticamente el terreno, las dificultades que suelen presentarse, de las cuales no es posible dar idea en las clases, y se formarían un concepto claro de muchas cuestiones estudiadas en los cursos: harían al mismo tiempo un trabajo útil, que tendría por lo menos el valor de un anteproyecto de utilidad general, si son bien elegidos los temas propuestos. Estos beneficios justificarían los gastos de viaje y de permanencia de los profesores y alumnos durante los ejercicios prácticos de fin de curso.

IV.

Conclusiones sometidas a consideración de la Sección IV del Segundo Congreso Científico Panamericano.

1. No debe exagerarse la instrucción teórica de los ingenieros: los conocimientos de ciencia pura se limitarán a lo que realmente es necesario para el estudio de la mecánica general, de la física técnica y de sus aplicaciones a las demás asignaturas en la extensión exigida por la práctica corriente profesional.

2. Las escuelas de ingeniería deben dar una enseñanza con frecuentes ejercicios en todas las asignaturas teóricas y prácticas: dichos ejercicios serán de cálculo, gráficos, de laboratorio y sobre el terreno, relacionando los conocimientos de las diversas materias, y aplicados a los casos más comunes de la práctica profesional de cada país.

3. La instrucción profesional de los ingenieros debe completarse con estudios de aplicación directa hechos en los talleres de las fábricas, o en los trabajos sobre el terreno u obradores de obras en construcción, y según las especialidades.

TO WHAT EXTENT MAY COLLEGE COURSES IN ENGINEERING BE PROFITABLY SUPPLEMENTED BY PRACTICAL WORK IN THE SHOP? TO WHAT EXTENT MAY LABORATORY WORK IN ENGINEERING BE REPLACED THROUGH COOPERATION WITH INDUSTRIAL PLANTS?

By ARTHUR A. HAMERSCHLAG,

Director Carnegie Institute of Technology, Pittsburgh, Pa.

College courses in engineering have presented many pedagogical problems. None have received so much discussion as the relationship of shopwork to the other studies included in the curricula. Since the evolution of engineering education has been from the shop to the college there has always existed controversial matter for the faculties to debate. Advocates of a mixed course, including the liberal studies, sciences, laboratory work, and shopwork, have finally won recognition and almost universally a composite group of studies has become generally accepted as the basis for suitable engineering training.

To revert again to the more generally accepted plan put into effect by our first class institutes of technology, colleges, and universities, in which sufficient resources are available for suitable equipment, there has grown a recognition of the important

ways in which practical shop and laboratory work can be profitably used by the faculty as an agency in crystallizing the fundamental principles of all manufacturing processes, so that the graduated student may understand the reason why operations of a certain type have been introduced. These practical shop courses likewise affect the point of view of the student and compel him to apply in terms of shopwork many of the underlying principles which otherwise would float in rather vague form in the recesses of his brain.

In spite of this concerted attempt to develop the all-round engineering graduate, there persists the traditional criticism that the engineering graduate is unready for immediate use in practical business enterprises. It must be self-evident that much of this criticism is of a sort which need not be seriously considered, since it is a criticism which could be aimed at any other professional career in which college preparation furnishes merely the content of a student's knowledge, whereas in the other professions a reasonable period subsequent to graduation, under supervision in hospital or court of law must be one of the factors in developing the more mature use of the knowledge gained in the college.

Both of these plans, European and American, have for their object the bringing of the student into direct contact with commercial conditions, and in this respect there can be no question that they in a measure accomplish their purpose. The European plan permits the student to give his undivided attention for a longer period to his studies.

If it is important that the shop processes be closely correlated to the principles taught, there must inevitably occur periods when the manufacturer can not in justice to his marketable output pitch the shopwork to provide the type of processes most closely related to the theoretical instruction taught at a given time by an unrelated educational staff or faculty. To accomplish this correlation and coordination, close supervision on the part of the college is essential, and very friendly and intimate cooperation on the part of the shop is of the greatest moment. These ideal conditions can only be attained by administrative diplomacy, and this may questionably very much restrict the pedagogical significance of the shopwork.

A graduate's resourcefulness is based upon his ability to adapt his knowledge to meet new conditions, new problems, new demands. Frequently successful business enterprises operate an intensive system of production with antiquated machinery and old-fashioned processes and methods. Not infrequently success is induced by a peak curve of demand rather than by any meritorious development of efficient and resourceful adaptations of the latest applications of science.

Thus have I presented difficulties incident to the two forms of shop and laboratory operations which range themselves outside those standard institutions that have introduced suitable shop and laboratory apparatus within their own walls, secured the needed equipment, using trained teachers, and have coordinated their shop and laboratory work intimately with the theoretical foundation in which their engineering curriculum must be built. But we must not presuppose that these American engineering schools have disregarded the oft-repeated criticism concerning the engineering graduate or the inadequacy of the shop preparation which the employer seems to consider so essential. These engineering colleges are prepared to admit the value of the commercial and operating environment as factors in the development of the graduate and most of them in addition to prescribing regular shop and laboratory exercises as a part of the curriculum rather require or expect that the student will spend the summer period when they are freed from all other studies in employment which compels them to taste the actual conditions under which they will have to work after graduation. There is some value gained by the student in being compelled to seek a position. There are other values in making him understand the value placed upon his services by the employer in competition with the unlettered and semiskilled with whom he competes. There are additional values in his attrition and unrestrained contact with

his fellow workmen and if to all of these values could be added the services of a supervising representative of the teaching force, it is my conviction that this type of practical shop and laboratory work during the summer vacation would in a measure at least be superior to either the European or any cooperative system.

¿QUÉ AMPLITUD PUEDE TENER EN LOS CURSOS ESCOLARES DE INGENIERÍA UNA PROVECHOSA PRÁCTICA SUPLEMENTARIA EN LOS ESTABLECIMIENTOS INDUSTRIALES?

Por JUSTINIANO SOTOMAYOR,

Director de la Escuela de Artes y Oficios de Santiago, Chile.

Es indispensable dedicar en los cursos escolares de ingeniería el mayor tiempo posible después de cada período de estudio, a la práctica en establecimientos industriales, procurando que esta práctica sea relativa a las materias cuyo tema haya sido desarrollado con anterioridad. La duración del período de práctica puede variar durante la enseñanza, aumentando en el último año, pero es imposible fijar en general el tiempo de duración que dependerá de la índole del aprendizaje, pudiendo ser mayor cuando se trata de especialidades y menor cuando se trata de enseñanza politécnica, pero nunca menos de 3 meses en cada año.

El objeto de la enseñanza de la ingeniería industrial debe ser preparar elementos que desde el instante en que cesa el estudio escolar puedan prestar servicios a la industria; elementos que posean la teoría, la práctica y la experiencia necesarias. Las escuelas actuales, por vastas que sean sus instalaciones no pueden dar la experiencia que requiere la industria, y es general que los jóvenes ingenieros completen sus conocimientos en los establecimientos industriales después de salir de la Escuela.

Dentro de los recursos de que dispone hoy la instrucción no sería posible establecer en las escuelas grandes industrias al lado de cuyos capitales la propia escuela desaparecería, ni sería justificado crear industrias para este fin, cuando existen éstas y pueden ser aprovechadas; pues es posible practicar en ellos, antes de ingresar a las escuelas, después de terminar los estudios o asistir periódicamente durante éstos. He preconizado la práctica en establecimientos industriales durante los estudios porque esta práctica queda bajo el control de la Escuela; he propuesto que sea relativa a materias ya estudiadas porque así se requiere menos tiempo para adquirirla y puede dirigirla el propio profesor especialista haciendo notar las particularidades y contestando a las dudas de los alumnos, la experiencia se adquiere así de una manera pedagógica. Es conveniente que los períodos de práctica vayan aumentando de la misma manera que los conocimientos teóricos; que los estudios escolares vayan sustituyéndose gradualmente por el trabajo, evitando así la transición brusca que separe los estudios de la vida comercial, porque así el ingeniero no pierde el hábito estudio que es la base del progreso. La práctica que adquieren los alumnos de escuelas politécnicas no debe llevarse a los mismos límites que la que adquieren los alumnos especialistas, pues por la razón misma de los estudios debe repartirse en gran número de ramos; estos no pueden evitar el aprendizaje posterior a sus estudios porque generalmente no saben cual será la industria que les dé cabida.

¿Hasta qué punto debe reemplazarse el trabajo de los laboratorios por una práctica en establecimientos industriales?

Estimo que no es aceptable reemplazar, ni en parte, el trabajo en los laboratorios por la práctica en establecimientos industriales porque los estudios experimentales requieren los laboratorios en toda su amplitud; porque en ellos se desarrolla la iniciativa, la perseverancia, y se demuestran las teorías. Sólomente los laboratorios individualizan la enseñanza. Reducir los laboratorios sería reducir la enseñanza experimental.

Sin perjuicio de la conveniencia que existe de hacer la práctica en establecimientos industriales, de acuerdo con los programas de estudio dentro del período de estudio, es muy conveniente llevar hasta donde el tiempo y los recursos lo permitan la enseñanza experimental en los laboratorios y desarrollar las instalaciones de experimentación.

¿QUÉ CÁTEDRAS DEL PLAN DE ESTUDIOS DE UNA ESCUELA MÉDICA DEBEN SER SERVIDAS POR DOCTORES EN MEDICINA QUE EJERZAN LA PROFESIÓN DE MÉDICO?

Por CARLOS YBAR,

Profesor de la Escuela de Medicina de Santiago, Chile.

Es de importancia, antes de entrar a discutir el tema que encabeza estas líneas, decir dos palabras sobre la forma en que se estima el profesorado universitario, en la mayoría de los países sudamericanos. Así, nuestras conclusiones contribuirán, aunque débilmente, a desvanecer prejuicios que tan hondamente dañan el progreso científico de los mencionados países.

El cargo de profesor universitario es considerado como un puesto honorífico para cuyo desempeño bastaría, en la mayoría de los casos, ser médico, ingeniero o abogado y cuya remuneración estaría de acuerdo con la superficialidad del puesto.

La persona que llegaría a la universidad habría ganado, dentro de este criterio, en consideración social, en reputación científica y por consiguiente en clientela profesional.

Este es el error: El profesor universitario no debe ser profesional; debe ser antes de todo profesor.

Si así se forman los hombres que dirigen la enseñanza superior, no podrán contar sino con la preparación científica para formar prácticamente un simple profesional; pero no pueden disponer de los conocimientos ni del tiempo que se requiere para dirigir a sus alumnos a una investigación original, en su forma más vasta y profunda. La enseñanza de un ramo de las ciencias médicas, jurídicas o teológicas es así apoyado en un tronco común a muchas ciencias. En Alemania ese tronco lo forma la facultad de filosofía que es el nudo científico que ata todas las otras facultades formando los estudios universitarios un conjunto único y armónico. Las ciencias no pueden profundizarse sin el conocimiento de las matemáticas; la teología sin el conocimiento de la historia, de la filosofía y de los idiomas antiguos; la medicina sin el conocimiento de las ciencias naturales. El profesor universitario debe abarcar las fuentes de que emana su ciencia y debe dominar profundamente aquellos medios de investigación que le permitan difundir y desarrollar la ciencia. Tan vasta tarea no puede ser la obra de un simple profesional sino la de un hombre perseverante que ha consagrado su existencia entera a tan elevada misión.

Para formar y consagrar los hombres a la universidad tenemos procedimientos claros y sencillos que consisten en educar profundamente al futuro candidato universitario y asegurarle en seguida una remuneración adecuada a su situación que le permita alejarse sin temor de la lucha por la existencia.

En Chile y en otros países sudamericanos empiezan a sustentarse vivamente estas ideas.

En vista de lo expuesto podríamos resumir nuestro pensamiento en tres consideraciones fundamentales: (1°) El profesor universitario debe estar profundamente preparado para la delicada tarea que va a desempeñar; (2°) el Estado le dará todos los elementos necesarios a la enseñanza y al progreso de las ciencias; (3°) le asegurará su existencia en forma tal que toda su actividad, su saber y su ideal lo consagrarán por entero en beneficio de su ministerio.

En conclusión, si así estimamos el profesorado universitario podremos decir lo siguiente de aquel que forma una facultad médica:

Creemos que sólo a los profesores de clínica médica y a los demás profesores de una facultad de medicina que enseñan la ciencia y el arte de curar, podría permitírseles un muy limitado ejercicio profesional, ya que a veces su asistencia es requerida imperiosamente por el que sufre.

El tema propuesto: "¿Las universidades y facultades universitarias sostenidas con fondos públicos deberán depender de autoridades independientes o autónomas o deben estar bajo la dirección inmediata central del Estado?" es de tal carácter que para solucionarlo convenientemente hay que considerarlo históricamente ya que la prosperidad de las universidades está indiscutiblemente unida a la libertad de pensamiento de su profesorado, en cualquier forma que estas instituciones se hayan desarrollado, ya sean amparadas por el Estado o constituidas por el esfuerzo espontáneo individual.

Después de la destrucción del Imperio Romano, el hombre de estudio buscó refugio en el convento. Llegó el momento en que un monje ilustre se encontró con las fuerzas necesarias para difundir sus conocimientos, su nombre prestigioso atrajo numerosa concurrencia; otros maestros aprovecharon el medio e iban al mismo lugar a difundir sus doctrinas y, así se formaron las primeras universidades de Francia y de Italia, sin la intervención del Gobierno ni de decretos ni de reglamentos.

Esos primeros destellos del saber humano, se desarrollaron amplia y brillantemente mientras fueron amparados por la libertad y la tolerancia, y no puso mano pesada sobre ellos el poder del Gobierno o el fanatismo de la época. De esta manera se bosquejó en la Edad Media el fundamento más sólido sobre que descansa la grandeza de las universidades contemporáneas cual es la independencia del profesorado, libre en la investigación filosófica y científica y ajeno a la acción inmediata y transitoria de los Gobiernos.

Entre numerosos ejemplos históricos podríamos citar el que refiere Bunge, respecto de la universidad francesa contemporánea.

Napoleón I dice, fundó la Universidad de Francia, cuerpo superior de instrucción pública que lo abarcaba todo desde las escuelas de instrucción pública hasta las facultades, en toda la extensión del país. Se llegó así a una acción simple y centralizadora barriendo todas las complejidades de las formas tradicionales y lo más grave es que barriendo o suprimiendo todo principio de autonomía, se hizo de las facultades instituciones del Estado reglamentadas y contrastadas y regidas por el Estado, y de cada profesor un empleado público. Sólo la inteligencia superior, la preparación y el celo de algunos académicos franceses pudo mantener el brillo de la antigua universidad francesa.

Este sistema francés trató de implantarse en Prusia a lo que se opuso vivamente Guillermo Humboldt, rector, a la sazón, de la Universidad de Berlín y fue él el que echó las bases de libertad y de grandeza de las actuales universidades alemanas.

Alemania, Francia como hemos visto, España, más que todo han tenido su época de intromisión en los detalles de la enseñanza universitaria y esa autoridad extraña a la corporación de los sabios, se ha caracterizado por una influencia perniciosa que ha detenido el vuelo del pensamiento y traído la decadencia de los estudios y de las ciencias.

En resumen: las universidades deben ser autónomas: ellas elegirán sus profesores, sus decanos y demás autoridades; formarán los planes de estudio y darán desarrollo y orientación a las ciencias. Ninguna autoridad política o religiosa debe pesar sobre las cabezas pensadoras y la más absoluta independencia amparará al que enseña. El Estado dará los medios, educará y elegirá bien los hombres; pero cuidando de abstenerse en absoluto de tomar parte en los detalles de la enseñanza.

¿QUÉ PREPARACIÓN DEBERÁ REQUERIRSE PARA ADMITIR ALUMNOS EN LAS ESCUELAS MÉDICAS? ¿CUAL DEBERÁ SER EL MÍNIMUM DE REQUISITOS EXIGIDOS PARA EL GRADO? ¿A QUÉ PARTE DE LA FACULTAD DE UNA ESCUELA MÉDICA DEBERÁ EXIGIRSE LA DEDICACIÓN DE TODO SU TIEMPO AL PROFESORADO Y A LA INVESTIGACIÓN? ¿CUÁL ES LA INSTRUCCIÓN MEJOR QUE PUEDE DARSE POR DOCTORES CONSAGRADOS A LA PRÁCTICA DE LA MEDICINA?

Por FRANCISCO A. RÍSQUEZ,

Profesor de la Escuela de Medicina de Venezuela.

Las modernas leyes sobre la instrucción pública en Venezuela, dictadas por el respectivo Departamento del Gobierno Nacional y sancionadas por el Congreso en su última reunión anual, conforme a las cuales se ha empezado en el presente año a organizar este ramo de la administración pública, responden a un criterio avanzado, que es el que ha presidido a las mencionadas disposiciones. Referirme a ellas explicándolas, equivale a exponer lo que, en materia de preparación y de requisitos para títulos y grados, se exige hoy en Venezuela.

Según esas leyes, el joven que pretende ingresar en una escuela de medicina, debe haber cursado todas las materias de la instrucción primaria y secundaria, hasta obtener el Certificado de Suficiencia en las asignaturas que corresponden al bachillerato en ciencias físicas y naturales, es decir, la ampliación de los conocimientos en aritmética, álgebra y geometría, de la geografía e historia nacional y universal, de la gramática castellana en toda su extensión, el latín y el griego, el francés, el inglés y el alemán; la filosofía elemental, la cosmografía y la cronología, el dibujo natural y lineal y la física, la química y la historia natural, todo esto apoyado en trabajos prácticos sobre casi todas estas materias, durante seis meses a dos años, según la importancia de la materia.

Así preparado, el alumno sigue durante seis años cursos teóricos de las diversas asignaturas de la carrera de medicina, simultáneamente con los trabajos prácticos correspondientes. Estas materias son casi las mismas que se exigen en todos los países.

Rendidos sucesivamente los exámenes en las 18 asignaturas, y aprobado en todas ellas, el alumno queda en condiciones de rendir un examen final para obtener el título de médico-cirujano, que le confiere el Estado y le autoriza para el ejercicio profesional.

Para estos estudios y títulos consiguientes, el Estado no pregunta al candidato dónde, cómo, ni con quién se hicieron aquéllos, sino si es suficiente en ellos y a este efecto, el Estado tiene sus juntas examinadoras. De este modo, el aspirante puede ingresar en una escuela privada, si la hay, como la ha habido y seguirá hasta que el Estado funde su escuela teórica, como ha fundado su escuela práctica.

Hay, además de este título profesional, el de doctor, que sólo se puede conceder a los que hayan poseído por lo menos hasta tres años atrás, el profesional correspondiente, y entonces, un examen de conjunto en las materias de todo el curso de medicina y una tesis desarrollada sobre tema a voluntad del candidato y examinada y aprobada por una junta especial, le concede al aspirante aprobado en estas últimas pruebas el diploma de doctor, que según se ve, es más que todo honorífico.

El libro publicado por el Dr. F. Guevara Rojas, Ministro de Instrucción Pública y autor de las avanzadas reformas a que nos venimos refiriendo, y del cual se han enviado al Segundo Congreso Científico Panamericano varios ejemplares, da más completa idea a quienes en ello tengan especial interés, sobre la situación actual en materia de estudios, grados y títulos médicos en Venezuela.

Las dos últimas preguntas del Tema XXIV las contestamos así:

En las poblaciones pequeñas, donde los profesionales no abundan, la especialización en cualquier ramo de las actividades, es muy difícil. En el punto concreto de las

ciencias médicas, es todavía más dificultosa la división de los profesionales en investigadores, docentes y prácticos, y en lo que a Venezuela se refiere, no se ha podido hasta ahora señalar diferencia alguna entre el profesor que da lecciones, el investigador que interroga al laboratorio y el práctico que lucha a la cabecera del enfermo.

No puede haber duda, sin embargo, de que las tres funciones indicadas debían marchar separadamente para poder sacar de cada una de ellas el fruto que ofrecen.

La conveniencia de consagrarse al profesorado queda demostrada con señalar cómo se ha hecho la consagración entre nosotros mismos de determinadas personas para determinadas materias de enseñanza, a tal punto que cuando alguien pregunta a quién confiar la enseñanza de tal asignatura, se contesta inmediatamente, sin vacilar y sin errar.

La importancia de la investigación y más que todo, del espíritu investigador en persona dedicada expresamente a ésto, ha tenido aquí mismo, entre nosotros, una demostración palpable cuando hace apenas 8 o 10 años un joven estudiante cuyo nombre debemos pronunciar con cariño por su obra, con respeto por su memoria y con dolor por su trágico fin—el Sr. Rafael Rangel—dedicado a la observación microscópica y parasitológica, reveló la existencia de los anquilostomos que diezaban las poblaciones de la República entre las sombras de un total desconocimiento de su existencia; demostró las tripanosomiosis del ganado venezolano, comprobó la invasión de la peste bubónica, puso en claro varios puntos de nuestra parasitología y abrió la senda por donde luego han ido muchos de los jóvenes que ilustran hoy nuestros anales científicos.

Es oportuno hacer notar que la reciente organización de la enseñanza superior en Venezuela, comenzada hace apenas un año y de la cual hemos hecho repetidas menciones, ha echado, a la vez, las bases de las especializaciones.

En efecto, creada como ha sido la Escuela Práctica de Medicina, las prácticas de ingeniería, del Liceo Nacional, etc., y fundadas como en breve lo serán la Escuela Teórica de Medicina y algunos trabajos complementarios, de hecho quedan consagrados por el conocimiento de las aptitudes y sancionados por las designaciones oficiales, quienes han de consagrarse a la enseñanza en cátedra, quienes a la investigación del Laboratorio y quienes a las manipulaciones de los trabajos prácticos.

Entonces podremos decir que Venezuela ha realizado el ideal de separar para la enseñanza teórica a tales personalidades, para los trabajos prácticos a tales otras, y abierto centro de investigaciones en las clases que ha dotado de un profesor, un jefe de trabajos y un preparador. Entonces se verán consagrados a la enseñanza de las patologías, las clínicas y las terapéuticas, a los ejercitados en la práctica de la profesión médica y dedicados otros a la investigación en las materias de anatomía, parasitología, física, química, historia natural, etc.

Queda dicho con esto cuan importante es la separación de los profesores y los investigadores, cuando a ello no se opongan las condiciones económicas del país y la escasez de profesores.

¿QUÉ PREPARACIÓN DEBERÁ REQUERIRSE PARA ADMITIR ALUMNOS EN LOS COLEGIOS DE AGRICULTURA NACIONALES Y DEL ESTADO?

Por B. H. A. GROTH,

Director de la Escuela Nacional de Agricultura, "Matías Hernández," Panamá.

Todas las actividades del colegio de agricultura deben determinarse por el grado en que ayuden al colegio a cumplir su objeto. Para determinar entonces qué preparación debe requerirse para la admisión, el objeto del colegio debe estar definido claramente. Una vista a las asignaturas de varios colegios demuestra que los métodos con

que se propone cumplir el objeto son varios; pero creo no engañarme con la declaración general de que todos los colegios de agricultura hacen un esfuerzo para mejorar la situación monetaria de sus agricultores, y con eso de todo su país, por medio de introducir prácticas más económicas de agricultura. Es claro que los requerimientos de admisión deben regularse de un modo que escoja aquellos alumnos que mejor puedan aprovecharse de la enseñanza. ¿Cuáles alumnos, pues, son los más capaces y aptos para diseminar la ciencia de la agricultura económica? Sin duda son los que tienen a la vez la inteligencia de aprender y la voluntad y oportunidad de practicar e instruir a otros. Si bien la voluntad y oportunidad se reconocen con dificultad, es más bien fácil percibir la inteligencia. En países donde la asistencia a las escuelas es compulsiva y la asignatura de todas bien sistematizada, una calificación alta de la previa escuela puede ser suficiente; en todos otros lugares la admisión por certificado perjudicaría al colegio tanto como al aspirante rechazado. La alta calificación indica no solamente el conocimiento y la buena voluntad, sino también la oportunidad que tenía el aspirante a aprender. Como el aspirante al colegio de agricultura tiene más o menos 16 a 18 años, será fácil al joven inteligente resarcir lo que le falta de conocimiento por falta de instrucción al alumno. En un examen escrito y verbal, de dos o tres horas se pueden distinguir con certeza los inteligentes, ignorantes por falta de oportunidad, de los ignorantes por falta de inteligencia.

El minimum de preparación requerido depende de la abundancia del material disponible. En ningún país la atracción del colegio de agricultura es tan fuerte como la del colegio académico, y por eso no sería posible mantener la misma norma de requisitos para admisión a los dos, aunque parecía deseable. En países como Panamá, en que hay pocas escuelas secundarias y esas solamente en las ciudades más grandes, un requisito de ser graduado de tal clase de escuelas daría por resultado que el colegio de agricultura quedaría sin alumnos. Lo mismo sucedería en muchos países panamericanos si se exigiese la graduación de la escuela primaria de ocho grados. No hay suficientes aspirantes que han pasado ocho grados de enseñanza primaria para llenar tal colegio. En la República de Panamá al presente no hay ni uno. Aunque en países en que el material bien enseñado es abundante se puede bien exigir tales requisitos de admisión; en los países latinoamericanos deben disminuirse estos. En la última instancia, con el presente estado de educación, se resuelve la cuestión de admisión siempre en la siguiente forma:

¿Qué requisitos de admisión nos va a ofrecer un número suficientemente grande de aspirantes, de modo que, después de rechazar a los que falta inteligencia y voluntad, nos queden suficientes para llenar la escuela? A medida que se mejora la educación general del país, se elevan los requisitos. Aquí en Panamá estamos en el primer año de la Escuela de Agricultura, y notamos que el requisito de tres años de enseñanza en la escuela primaria, junto con una edad mínima de 14 años es bien alto. Las dificultades de trabajar con tales alumnos son grandísimas, por supuesto, pero con un requerimiento más, nos quedaríamos sin alumnos.

Todo lo antedicho se refiere a los colegios del estado en países grandes o a los colegios de primera clase en cualquier país. Unos años después de graduar los primeros alumnos se va a hacer sentir la necesidad de un colegio más avanzado, de cuyos alumnos se pueda alistar el cuerpo de maestros de los otros. La enseñanza en tal colegio debe ser primeramente teórica. Este colegio, que para distinguirlo del colegio de los estados, se puede llamar el colegio nacional, debe requerir de los aspirantes que sean graduados de los colegios de agricultura de bajo grado. En un país en que todos los colegios son nacionales, por supuesto se usará otra designación.

¿Hasta qué punto en los colegios agrícolas deberán ser los cursos de estudios teóricos y generales y hasta qué otros, prácticos y especificados?

El ideal del alumno graduado del colegio de agricultura, como muchas veces se presenta a la imaginación del instructor, es de un joven perfeccionado en la

teoría de todo lo que pertenece a la agricultura lo mismo que en la práctica de todos los trabajos usuales y anormales de la finca con cualquier cultivo.

Tal individuo perfecto no se encuentra ni entre los alumnos graduados ni entre los instructores o presidentes de los colegios agrícolas. Si tal vez se encuentran en el colegio unos profesores versados en la práctica de agricultura, es cierto que lo están solamente con unos pocos cultivos. Muchos trabajos de la hacienda no se aprenden prácticamente en unos días o semanas, y la vida de un hombre no alcanza para aprender bien la práctica así como la teoría de muchas operaciones agrícolas. Entonces hay que escoger. Ya existen teorías para explicar los trabajos de la práctica actual y para poner la base para perfeccionamientos futuros. Cada contemplación de razones descubre una cadena sin fin de razones anteriores, siendo cada una la contestación al porqué de la que antecede.

Algunas de estas razones están bien probadas y pueden clasificarse como verdades demostradas; otras expuestas a varias interpretaciones o críticas, mientras que otras, todavía son solamente las ideas del instructor, tal vez correctas, pero no probadas por ningunos experimentos.

La primera clase de estas teorías compone la masa de la enseñanza teórica. En colegios de alumnos de alta calificación se debe tratar de la segunda clase, sometiendo a discusión los dos lados de cada cuestión, pero la tercera clase mejor no se toca. No es siempre fácil discriminar, y todo debe juzgarse por la prueba. Tal vez puede parecer aconsejable ensayar la prueba con los alumnos mismos en el curso; pero cualquiera persona que tiene experiencia en la experimentación agrícola, con su dependencia en el clima, sabe muy bien que una teoría impugnada por científicos no puede probarse con el trabajo aficionado de alumnos, mientras que un resultado torcido por razón de un clima caprichoso, puede hacer mucho daño.

Tratando, por ejemplo, del trabajo más elemental, arar, la cuestión patente es aquella de ¿Porqué se ara? El instructor da las siguientes razones: porque (1) se afloja la tierra; (2) se voltea el suelo.

Las dos son verdades, sin duda, pero no explican. Siguen inmediatamente las cuestiones: ¿Y qué ventajas al cultivo producen el aflojamiento de la tierra y la volteo del suelo? Limitándonos a la primera, diremos que la tierra aflojada (1) Permite mejor el crecimiento de las raíces; (2) proporciona más aire a las raíces; (3) conserva mejor la humedad del suelo, etc.

Cada una de estas afirmaciones debe explicarse de nuevo, mostrando cómo se hace la acción y para qué sirve. En la primera cuestión todo es claro y se acepta sin duda por cualquier persona. De la segunda el "cómo" es fácil de entender y se elimina inmediatamente, pero, ¿para qué sirve? Se contesta que (1) Las raíces necesitan una cierta cantidad de aire, que no es posible conseguir en tierra dura; (2) la acción del oxígeno del aire facilita la descomposición de sales solubles con dificultad o insoluble en el agua; (3) la presencia del aire ofrece un medio favorable al desarrollo de bacterias y microbios, etc.

De estas tres razones la primera otra vez es una verdad que puede demostrarse; la segunda también es una verdad; pero es difícil de demostrar a alumnos no bien versados en la química de la tierra, como una descomposición general de las sales en la tierra, sería una ventaja al cultivo. Así depende en la preparación del alumno si se puede seguir con la teoría o si debe concluir aquí. La tercera razón también es una verdad, pero si se ensaya a demostrar para qué sirve un desarrollo rápido de bacterias, no se debe olvidar que muchos otros microbios también se desarrollan mejor en la tierra suave y que mientras que unos son útiles otros son no solamente inútiles sino perniciosos. En colegios de agricultura, de baja norma, será mejor no decir nada de las bacterias sino las de las leguminosas; en las de alta norma será bueno explicar el total de la verdad, es decir, de lo que se sabe. Aquí tenemos un sujeto en que tal vez el instructor tiene su misma opinión. Por ejemplo, es posible que se considere cierto que la ventaja que dan las bacterias útiles es mayor que el daño que

hacen las bacterias perjudiciales. Tal vez tiene razón, pero sin embargo es nada más que una opinión, y como no es sostenida por ninguna prueba, es mejor no mencionarla.

Así se vé que la teoría de cualquier trabajo puede enseñarse a los alumnos hasta cierto punto que se determina por la preparación del alumno y el estado presente de la ciencia. Es peligroso entrar con mentes desprevenidas en sujetos disputados, porque es fácil para ellos formar opiniones sin suficiencia de pruebas, y será difícil más tarde desarraigar opiniones falsas.

La práctica misma, ¿hasta qué punto se debe enseñar? Tomemos una operación tan simple como el arar. ¿Es el deber del colegio hacer un buen arador? Para ser capaz de trazar con el arado una línea recta, se necesita al menos unos meses de práctica diaria. Claramente nó hay tiempo. Esto, sin embargo, no es preciso saber. Lo que deben saber los alumnos del manejo del arado es cómo se sienta en la máquina, cómo se arregla la profundidad del corte, cómo se gira con la menor pérdida de fuerza y terreno, cómo se divide un terreno grande para arar en tiras, etc., y él debe hacerlo por sí mismo bastantes veces para tener una cierta confianza en su capacidad. Como no necesita ser buen carpintero para fiarse con el uso del martillo, no necesita ser buen arador para aprovecharse del arado después de salir del colegio.

Pero ningún alumno va a usar o comprar un arado, una cultivadora, una guadañadora, si lo único que sabe del uso de esas máquinas lo sacó de libros o lecturas. La práctica debe incluir la suficiencia del manejo actual de una máquina, un sistema, un método económico, para garantizar que el alumno, cuando trabaja en su propia finca, los vaya a usar como los más racionales que conoce.

Tocante al tiempo que debe gastarse en la teoría, en la práctica, se necesita tener presente que tenemos tres clases de sujetos que enseñar en la escuela de agricultura, a saber (a) la teoría de la agricultura; (b) la práctica de la agricultura; (c) sujetos de educación general.

Al tercer grupo pertenecen lenguaje, ciencias no agrícolas, etc.

Con tanto aprender, en tres o cuatro años parece al primero imposible poner aparte ciertas de las horas tan preciosas para el trabajo actual en el campo, y en muchos colegios agrícolas las horas de la práctica son tan disminuidas que son solamente los jóvenes que tenían la práctica en el campo antes de venir al colegio los que pueden hacer el trabajo después. Un joven de la ciudad nunca aprende la práctica en tal clase de colegio. Pero como el objeto primario del colegio es el de mejorar las prácticas del país, es claro que los alumnos del campo mismo no han tenido la mejor práctica posible, mientras que los pobres de la ciudad van a aprender las prácticas corrientes sin jamás haber practicado los métodos mejores que han aprendido teóricamente.

El curso del colegio agrícola tiene un término medio de 40 a 44 horas por semana. ¿Cuántas deben prorratarse a la teoría, a la práctica y la educación general? La cuestión no se contesta categóricamente porque hay que considerar la necesidad de los alumnos, que depende otra vez en su preparación anterior. En un colegio con bajos requerimientos de admisión, lo más urgente es más de preparación general, de modo que al menos la tercera parte del tiempo se utilice con sujetos de esa clase. Quedan 26 a 30 horas por semana para dividir las entre la teoría y la práctica.

Como es más fácil dar la teoría y de ésta da mucho menos molestia, hay costumbre de dar al menos de 20 a 22 horas de teoría, lo que deja 6 a 10 horas de práctica. Siempre se gasta algo de este tiempo con ir y volver del campo que siempre está algo lejos del aula y cuál es el resultado? Que el trabajo práctico no es mucho más que un gasto inútil de tiempo para la mayor parte de los alumnos. Me parece que como la mitad del tiempo debe usarse para la práctica y que el mejor plan es el de agrupar todos los trabajos en tres o cuatro tardes enteras en la semana. Es verdad que el proyectar los trabajos prácticos ofrece grandes dificultades, porque en muchos trabajos la presencia de un número de mirones molesta mucho y atrasa el progreso del trabajo, pero debe tenerse presente que la enseñanza en el colegio de agricultura es primeramente para el beneficio de los alumnos y no de una finca modelo.

En el colegio con alta norma de admisión, se necesita de menos tiempo para sujetos generales, y en vez de utilizar todo el tiempo ganado en la enseñanza de la teoría, sería mejor dividirla entre la teoría y la práctica, porque la teoría se enseña mucho más ligeramente que la práctica y por eso no necesita tanto tiempo. Sin embargo un trabajo aprendido en la sala de lectura y después practicado en el campo nunca se olvida.

¿En qué grado deberán determinarse los planes de estudios de cualquier colegio de esta índole por las condiciones locales?

Hay ciertos trabajos de la hacienda que son casi los mismos en cualquier clima o localidad, como la limpieza original del terreno silvestre, drenaje, riego, manejo general de la hacienda, el arar, la aplicación de abonos, etc. Todos estos asuntos entonces, juntos con los cursos generales y preparativos, no dependen en gran parte de las condiciones locales.

También en grandes partes de las zonas templadas unos pocos cultivos son tan preeminentes que es fácil distinguir el esencial del facultativo de la enseñanza. Además, los trabajos hasta la cosecha de cultivos tan diferentes, como el maíz, el algodón, el frijol y el tomate por una parte, o del trigo, arroz, alfalfa, y nabos, por la otra, son tan similares que con unas alteraciones debidas primeramente al tamaño de la planta el cultivo de una sirve de modelo para el cultivo de la otra.

En los trópicos, sin embargo, se encuentran todas las variaciones del clima de la zona templada sin la limitación por el frío del invierno, aumentadas por muchas otras, debido a la época de las lluvias y al tiempo seco, terrenos altos y bajos, todos los cuales se encuentran en un solo país y muchas veces en una localidad limitada. En los tiempos de lluvia, por ejemplo, la mala yerba florece, mientras que es imposible trabajar en el campo con máquinas agrícolas; en la cima de una montafia puede ser buen lugar para el trigo, en el declive para el café, al pié, para la yuca y al río para el guineo; todos estos cultivos radicalmente diferentes y todos dentro de los límites de una localidad, tal vez de una sola finca.

Claramente, aunque sería posible en un clima templado introducir a la clase todos los cultivos aptos a salir bien, eso es imposible o impracticable en los Trópicos. Otros: en muy pocas partes de los países tropicales se conoce cuál de los cultivos posibles será el más económico o provechoso.

Entonces tenemos la cuestión: ¿Vale la pena enseñar algo de todos los cultivos posibles en el país junto con la teoría de los cultivos grandes de la zona templada? Me parece que es el deber del colegio descubrir cuáles son los cultivos más importantes del país, enseñar esos a fondo, y tocar en los otros cultivos tanto como lo permite el tiempo. Si la Estación Experimental que debe estar en contacto con cada colegio de agricultura, descubre que otros cultivos darían mejores resultados que los usuales, es tiempo de introducirlos entre los cultivos importantes.

En países en que el número de alumnos es suficientemente grande para más de un solo colegio, se aconseja colocarlos en los centros de producción de diferentes materiales o crías y dar más importancia en cada escuela al cultivo local. El enseñar el detalle de un cultivo que no tiene ninguna importancia en las localidades de donde vienen los alumnos es tiempo perdido, porque en el supuesto mismo que fuera posible enseñar bien la teoría y la práctica del cultivo del café en una localidad donde no hay café, es cierto que el dueño de un cafetal nunca va a tomar un alumno, así enseñado, para manejar su finca. Es posible que le dé trabajo, pero trabajo en que se aprende y no de la clase en que se instruye a otros. Es importante, sin embargo, que el alumno adquiera la convicción de que cuando quiere información sobre un cultivo nuevo, siempre se puede conseguir en la Estación Experimental de su "alma mater."

SUMARIO.

1°. Se debe requerir una preparación tan alta de manera que queden suficientes alumnos para llenar el colegio, después de rechazar los que faltan en inteligencia y buena voluntad.

2°. Depende en la preparación del alumno hasta qué punto se puede enseñar la teoría. Las clases de la instrucción teórica no deberán tomar más de la tercera parte hasta la mitad del tiempo disponible para la agricultura.

La práctica en los trabajos agrícolas debe incluir suficiente trabajo actual para que la máquina, el método o el sistema enseñado parezcan al alumno graduado las cosas más racionales a usar.

Las clases prácticas deben agruparse en tres o cuatro tardes enteras por semana y tomar la tercera parte hasta la mitad de todo el tiempo disponible.

3°. Si hay solamente un colegio de agricultura en el país, debe enseñarse a fondo el cultivo de unos pocos productos más importantes y tocar en los otros tanto como lo permita el tiempo.

Si hay más de un colegio, deben colocarse en los centros de cultivos diferentes y dar más importancia a los cultivos locales.

¿CUÁL DEBERÁ SER EL LUGAR DE LA INSTRUCCIÓN INDUSTRIAL EN EL SISTEMA ESCOLAR DE LAS REPÚBLICAS HISPANO-AMERICANAS? ¿DEBERÁ SOSTENERSE CON IMPUESTOS PÚBLICOS? ¿DEBERÁ SER CONSIDERADA COMO UNA FUNCIÓN DEL SISTEMA PÚBLICO ESCOLAR? ¿DEBERÁ DARSE BAJO UN SISTEMA SEPARADO Y BAJO UNA ORGANIZACIÓN APARTE? ¿CÓMO Y HASTA QUÉ PUNTO PUEDEN LAS ESCUELAS INDUSTRIALES COOPERAR CON LOS CONTRATISTAS DE OBREROS?

Por JULIO CÉSAR BOLET,

Antiguo Miembro del Consejo de Instrucción del Distrito Federal de Venezuela.

Las anteriores preguntas plantean a lo vivo un problema moderno en la instrucción pública.

Es obligación del Estado para con el ciudadano, o mejor dicho, del administrador para con el contribuyente, suministrarle aquella instrucción más a propósito para la vida real, para el éxito de la vida práctica; es decir, aquellos conocimientos y aquella disciplina que le sirvan para ir armado a la lucha por la existencia.

En la práctica deducida de la guerra actual, no será la menor, la lección que dará sobre la urgencia de reformar el actual sistema de educación.

El Profesor Heeren, Director del Gimnasio de Bueckenburg, que ha estado sirviendo a su país en las trincheras y en los campos de batalla, ha tenido ocasión de apreciar la necesidad de aquella reforma, y ya ha celebrado varias conferencias con otros profesores que se hallan en las mismas circunstancias y en las mismas creencias.

La idea primordial de dicha reforma es que la educación debe ser mucho más práctica que lo que los actuales estudios pueden dar. Éstos, como disciplina mental, han sido muy útiles; pero deben, si no abandonarse, hacerse a opción, como cualquier aprendizaje científico o literario.

Una Nación necesita no solamente sabios, sino también hombres aptos para la vida práctica. Creen los dichos profesores que deben aumentarse los ejercicios corporales para producir el más completo desarrollo de la salud, debiéndose cultivar libremente las fuerzas musculares, y hacerse obligatoria la instrucción industrial, comenzando por los ejercicios manuales infantiles, desde el primer grado hasta el completo dominio de un arte mecánico, enseñando al niño el valor de las materias primas, el trabajo de metales y de maderas, el uso, empleo y reparación de máquinas, y de aparatos de uso constante y de aplicación moderna.

Una de las bellezas y grandes utilidades del "Sistema Montessori," que trata de desarrollar en el niño el sentido de su relación con el medio en que vive, con el mundo en que existe, enseñándole a moverse con facilidad y libertad, siempre dueño de sus

acciones, haciéndole adquirir aquella seguridad que le es absolutamente necesaria para el éxito en la vida práctica, porque es la prueba de su eficiencia.

El Estado está, pues, obligado a desarrollar en todos sus ciudadanos aquellas facultades físicas de eficiencia, al igual por lo menos que el desarrollo intelectual, el cual debe considerarse como abierto a la selección individual, en escuelas separadas, y no como objetivo primordial de un sistema de instrucción pública.

Conforme con las anteriores apreciaciones, creo que el Estado debe mantener en todo Programa de Instrucción Pública la enseñanza industrial, no en escuelas separadas, sino como parte de todo plan. Y por consiguiente, debe el Estado pagar dicha instrucción industrial como ha venido pagando la instrucción literaria.

Respecto a la cooperación de las escuelas industriales con los contratistas de obreros, tendrán la que naturalmente les corresponde, como base de educación nacional, y no como ramo especial de ella. Todos los individuos tendrán interés en la protección industrial y por consiguiente en el obrero, llegando éste a influir definitivamente en la solución del problema industrial tal como existe hoy, y por tanto, su influencia intelectual, industrial y social será suprema y decisiva.

Al querer contestar conscientemente a las anteriores preguntas, tal vez haya incurrido en el pecado de extralimitación y de dogmatismo; pero pido se me excuse por haber sido llevado a ello, por el deseo de hacer más visible la necesidad de la reforma de educación que exige la vida moderna.

Menos saber y más acción: *Primum vivere, deinde philosophare.*

¿CUÁL DEBERÍA SER EL LUGAR DE LA INSTRUCCIÓN INDUSTRIAL EN EL SISTEMA DE LAS REPÚBLICAS AMERICANAS? ¿DEBERÍA SER CONSIDERADA COMO UNA FUNCIÓN DEL SISTEMA PÚBLICO ESCOLAR? ¿DEBERÍA DARSE BAJO UN SISTEMA SEPARADO Y BAJO UNA ORGANIZACIÓN APARTE?

Por ALFREDO SAMONATI,

Inspector Técnico de Instrucción Primaria del Uruguay.

La enseñanza técnica industrial ha llegado a constituir hoy, para las naciones que tienen fija su mirada y su esperanza en el porvenir, una de las cuestiones de mayor y de más vital importancia.

El interés extraordinario que de pronto han despertado en todas partes los distintos problemas que de algún modo afectan a dicha enseñanza, y la atención consiguiente que hacia sí llamaron, tiene su explicación lógica en una serie de factores de orden diverso, entre los cuales se encuentran: la aguda rivalidad existente entre las naciones productoras por lo que concierne a la obtención de la supremacía comercial y a la conquista de los mercados de consumo, rivalidad que va intensificándose más y más a medida que se acrecientan las facilidades que ofrecen los medios de comunicación y de transporte; la llamada "crisis del aprendizaje" que ha transformado en insuficientes e imperfectos los medios de que ha venido disponiéndose para la formación de obreros inteligentemente hábiles y prácticos, capaces de mejorar la calidad y cantidad de los productos que se fabrican; el reconocimiento de que las escuelas primarias, para los alumnos que no han de continuar sus estudios en los centros especiales o superiores de enseñanza, no elaboran la clase de preparación que se requiere para afrontar la lucha por la existencia; la luz arrojada por el desenvolvimiento creciente de las ciencias sociales, en cuanto presenta al individuo, en virtud de su origen, su naturaleza y su destino, no como un ser aislado, sino como parte integrante de un cuerpo mayor, cual es la sociedad, a ella vinculado y a ella unido por múltiples conceptos; la necesidad imperativa de que para que el Estado llene sus más altos y más vitales fines, ha de poseer preparados y hábiles ciudadanos, y no algunos de

ellos, sino su completa totalidad; la moderna extensión dada a la esfera educacional en cuanto tiende a incluir dentro su radio de alcance, a más de la instrucción y cultura generales, la preparación vocacional, en todos sus aspectos, sostenida con fondos públicos y bajo la vigilancia de los poderes oficiales, y, por último, la aplicación de la electricidad y del vapor, en las proporciones vastísimas en que actualmente se hace, así como la concentración de grandes capitales a los efectos de un propósito único, cosas ambas que revolucionaron por completo la forma de explotarse las industrias y los métodos consiguientes de producción fabril.

Si los factores enunciados han contribuido, de consiguiente, a que se formase en la conciencia pública una idea o concepto más alto y generoso del valor que entraña la enseñanza técnica aplicada a fines industriales, a concebir claramente que está llamada a desempeñar un papel de alta trascendencia en la sociedad, a que debe partir de abajo y llenar las exigencias del mayor número, ya que se trata de la preparación de la masa productora, que dentro de su carácter de grandeza y de necesidad social todo entra en juego—la educación moral y práctica de las clases populares, la formación de las inteligencias y el desarrollo de las aptitudes aplicadas a los progresos de la riqueza nacional, la salvaguardia de las industrias y del comercio, etc.—no es sino lógico que sea el Estado quien, con la solicitud debida, la tome a su cargo y haga producir de ella todo el fruto de que es capaz.

Los países americanos, hablando en términos generales, han organizado sus respectivos sistemas de enseñanza, tanto elemental como secundaria y superior, en forma que puede conceptuarse como bastante perfecta y acabada, por manera que en muchos de sus detalles pueden compararse ventajosamente, con los que poseen las naciones consideradas como más progresistas en materias educacionales. No es posible decir lo mismo, sin embargo, por lo que se refiere a la preparación científica y racional del futuro obrero.

El adolescente, que deseando dedicar sus actividades futuras a ocupaciones manuales, mecánicas o artísticas después de abandonar la escuela primaria con sólo un bagaje elemental de conocimientos, únicamente lo puede hacer, cuando es posible, ingresando a un taller como aprendiz, a los efectos de adquirir allí, de un modo empírico, al pie del banco de trabajo y no con pocos esfuerzos y poco tiempo, los principios básicos y la experiencia práctica de la vocación buscada.

Esa escasez, o falta muchas veces, de oportunidades propicias, ha provocado en los países americanos de origen latino, por una parte, una corriente demasiado pronunciada de elementos hacia las carreras llamadas liberales, en las que no han tenido éxito alguno en no pocas ocasiones, y hacia los puestos vegetativos de la administración pública, por otra, al par que ha sido la causa originaria de que una gruesa masa de juventud, de otra manera útil y provechosa para sí y para la sociedad en general, desorientada en cuanto se relacionase a la consecución de ideales y propósitos determinados y concretos, haya perdido sus mejores años, cuando no su porvenir, aplicando sus esfuerzos hoy aquí y mañana allí, a tareas transitorias o inestables, poco productivas y sin bases ni horizontes de futuro.

El mal radica, pues, en que se ha puesto al alcance de los unos todos los medios y las facilidades posibles para su mejoramiento intelectual y para su ascenso a carreras superiores, mientras los más, constituidos por la juventud menos pudiente, han quedado casi sin amparo alguno por lo que a su preparación vocacional concierne.

Se ha formado así el elemento de arriba, la clase dirigente, con menoscabo del hombre de las filas, del brazo productor, y a ese régimen unilateral de los distintos sistemas de enseñanza americanos, debe atribuirse en gran parte la pobreza, con las consiguientes faltas de comodidad y de higiene que siempre trae aparejada, en que viven muchos de los habitantes de estos países nuevos, sobre todo del campo, donde, con un poco de iniciativa personal, provocada y desenvuelta como consecuencia de una preparación básica de orientaciones definidas, hubieran encontrado fáciles y provechosos medios de existencia.

Hay, pues, en ese sentido, un vacío, una laguna amplia y profunda, que debe llenarse en la forma más completa y acabada posible, mediante la intervención directa del Estado, que es a quien, sobre todo, interesa el problema.

Aparte de esas consideraciones, sabido es que las Repúblicas que integran este continente, poseen cuantiosas riquezas naturales que podrían servir de base y permitir el desarrollo de las industrias mecánicas y manuales, no sólo en sus distintas ramas y variedades, si que también, cada una de ellas, en grandes y vastas proporciones.

Los países americanos, a excepción de los Estados Unidos, han venido dependiendo hasta ahora, en grado mayor o menor, por lo que a los productos fabriles concierne, casi exclusivamente de los grandes centros de explotación industrial de la vieja Europa. Aquí mismo, los establecimientos productores que existen están, en gran parte, en manos de extranjeros, siendo también extranjeros en general, los operarios ocupados en las fábricas y talleres de los mismos.

Es muy deseable, sin duda alguna, la incorporación del brazo extraño a la vida industrial y comercial de estos países nuevos, en los que casi todo está todavía por hacer, pero una medida prudente de previsión aconseja no confiar siempre y esperarlo todo de aquellos que llegan a nuestras playas hospitalarias, sino el procurar, por múltiples razones, que se formen de su propio seno elementos de trabajo, en manos de los cuales vaya a condensarse con el tiempo la mayor suma posible de riqueza nacional.

El comercio de exportación de los países latino-americanos, está casi por entero representado por el envío al exterior de materias primas no elaboradas en ninguna forma, o, en el mejor de los casos, trabajadas tan sólo en sus más simples y sencillas manipulaciones. Dejamos que sean otros quienes se encarguen de transformar aquellas materias primeras nuestras, en productos de aplicación inmediata, para pagarlas luego en dos, tres o más veces su valor primitivo. Ese fenómeno o régimen económico no significa otra cosa sino riqueza que se pierde y que se va; en definitiva, un mal negocio, sobre todo si se piensa que muchos de los recursos naturales, no siendo inagotables, van desapareciendo sin que sea posible recuperarlos más.

De las tres formas de las cuales podemos disponer de las riquezas de nuestros países (a) la de vender al extranjero, a los centros fabriles de otras partes, las materias primeras para que ellos las trabajen por nosotros y nos las devuelvan transformadas en productos concluidos; (b) la de traer obreros extraños para que exploten aquí las industrias posibles, y que, después de algunos años, regresen a su país, enriquecidos, para vivir de los caudales acumulados gracias a nuestra imprevisión; y (c) la de formar operarios propios, inteligentes y hábiles, capaces no sólo de producir, sino de ser vendedores al extranjero, de esas tres formas, es indiscutible que la última es la más sabia y más prudente, sea cual sea el punto de vista desde el cual se la aprecie y considere.

Pues bien, todos los antecedentes mencionados llevan a la conclusión de que la enseñanza técnica industrial es, en primer término, una función del Estado, como lo es la de carácter elemental primario, y, en segundo lugar, que debe ocupar un puesto de preferencia dentro del sistema educacional tan acentuado o más que el que tiene actualmente la enseñanza secundaria y superior.

No significa esto como es claro, que el problema de la enseñanza industrial deba resolverse de una manera tan intensiva y extensiva que tienda a orientar todas o la mayor parte de las energías vivas de un país hacia una finalidad única como lo sería si se encaminaran los esfuerzos en el sentido de las carreras mecánicas o manuales. No, equivaldría eso a caer en el mismo grado de unilateralidad que se combate. Por otra parte, la potencia económica de una nación no consiste en el establecimiento indefinido de fábricas y talleres, por lo mismo que un constante exceso de producción puede, en un momento dado, traducirse en un mal, es decir, en miseria, tanto para el patrón como para el obrero, sino que estriba, considerada desde el punto de vista industrial, en la explotación proporcionada a las necesidades y a la demanda que reclaman los mercados consumidores.

Alemania, lo mismo que Inglaterra, naciones que hace apenas un siglo eran sobre todo agrícolas, han hecho de la Industria y del Comercio las dos grandes, puede decirse las dos sólo y únicas preocupaciones de su existencia. Llevadas por la fiebre industrial que ofrecía resultados prometedores, quitaron a la agricultura una gran parte de sus fuerzas, de sus brazos para transformarlos en operarios, ingenieros e industriales, así como de su suelo, para consagrarlo a fábricas, usinas y talleres y a la explotación minera. Eso explica porque esos dos países, tal vez más que otros, han llegado en la actualidad a depender en gran parte del exterior para muchos de sus productos alimenticios.

En los países americanos, todavía poco densos de población, de vida pastoril muchas veces, no podrían, ni sería deseable tampoco, que se transformaran inmediatamente en pueblos eminentemente industriales en el sentido de la explotación fabril o manufacturera, sobre todo cuando la ganadería y la agricultura pueden ser por ahora y por mucho tiempo todavía fuentes poderosas de recursos. Es conveniente, sin embargo, que, procediéndose con circunspección, consultándose las necesidades locales ante todo y los intereses de la comunidad, se vayan estableciendo progresivamente en los centros importantes de población escuelas técnicas industriales, que permitan ir formado los obreros que reclaman las manufacturas existentes y las que irán estableciéndose en lo futuro como consecuencia lógica del aumento de población, de la expansión comercial y de las necesidades internas y del exterior, ya que, por otra parte, resultaría inoficioso que se fundaran escuelas con determinados cursos, si más tarde, los elementos de trabajo que en ellas se formasen, no habrían de encontrar en el ambiente que los rodea las oportunidades requeridas para ejercer sus respectivas vocaciones.

Hemos dicho más arriba que la enseñanza industrial debe considerarse como una obligación del Estado, así como ocupar un puesto de preferencia dentro del sistema educacional sostenido con fondos públicos.

Siendo esa su posición, por su naturaleza especial todo el mecanismo de la enseñanza técnica aplicable a fines industriales requiere que se le organice sobre bases propias, por manera que la órbita de acción en que se mueve venga a englobar un conjunto de hechos que la singularicen con características bien definidas y concretas.

El sistema de la enseñanza primaria o elemental y el de la instrucción técnica proporcionada por intermedio de escuelas industriales, deben guardar entre sí íntimas y estrechas relaciones. Los cursos primarios tienen que articularse lógicamente y naturalmente con los cursos industriales, de modo que los educandos que no hayan de seguir estudios conducentes a carreras superiores, puedan efectuar el tránsito de los primeros a los segundos sin violencias de especie alguna.

La relación de las distintas esferas educacionales una vez organizado el sistema de enseñanza industrial, podría representarse gráficamente en su forma más simple, del siguiente modo: Enseñanza primaria; enseñanza industrial primaria; enseñanza industrial superior; enseñanza secundaria; enseñanza superior.

Como se ve, la escuela primaria, que es el punto de partida cualquiera sea la dirección que haya de seguirse en lo futuro, al conservar siempre el carácter que su misión fundamental le impone—la de sembrar conocimientos generales en las mentes infantiles, al mismo tiempo que provocar el desarrollo de sus potencias psicofísicas embrionarias—se articula de un modo racional con los centros educacionales que le siguen, formando con ellos un conjunto armónico, como es lo correcto, ya que por muchos que sean los organismos constitutivos de un sistema escolar cualquiera, y por complejos que resulten en sí mismos y en sus relaciones recíprocas, no pueden ni deben tampoco funcionar como entidades independientes en un todo los unos de los otros.

Sin embargo, a pesar de las vinculaciones más o menos íntimas que pueda tener con la enseñanza primaria, es evidente que el organismo constitutivo del sistema de educación industrial está representado por un conjunto de hechos y de cosas que lo revisten de un carácter de naturaleza propia y bien definida. La enseñanza industrial

tiene problemas que resolver que a ella sólo le pertenecen, como también los tiene la enseñanza secundaria y la que corresponde a los centros educacionales de rango universitario superior. Su acción, aunque pueda en cierto modo estar más o menos íntimamente relacionada con la de otros organismos escolares, se desenvuelve en una esfera y en un ambiente distintos, se regula de un modo especial y responde a finalidades que a ella sólo pertenecen.

Si todos esos factores, de consiguiente, han de resolverse de un modo satisfactorio, no es sino lógico que a la enseñanza de carácter industrial se le conceda la correspondiente autonomía, colocando todo el sistema al cual pertenece bajo la dependencia técnica y administrativa de un cuerpo de naturaleza especial, como lo está en casi todas partes, respectivamente, la enseñanza primaria y la secundaria y superior.

Las consideraciones expuestas conducen, pues, a las siguientes conclusiones:

1ª. Que por la inmensa importancia y trascendencia que entraña para la vida social y económica de toda nación, la enseñanza industrial debe considerarse como una de las funciones principales del Estado, no sólo porque así lo reclama un indiscutible principio de justicia y equidad, sino por cuanto sólo puede prosperar y hacerse lo suficientemente intensiva y extensiva, si aquel la toma a su cargo, con el grado de solicitud y dedicación con que lo hace en lo referente a la enseñanza primaria, secundaria y superior.

2ª. Que la enseñanza técnica para fines industriales, además de asumir el carácter de obligatoria, tratándose de adolescentes, debe procurar satisfacer las necesidades de dos clases de elementos: (a) del joven, que sin experiencia todavía en cuanto se refiere a la vida activa de la industria y del comercio, desea prepararse para ejercer algunas de las vocaciones manuales o mecánicas, y (b) del obrero adulto, formado empíricamente, pero que ambiciona acrecentar sus conocimientos básicos y mejorar así el grado de su eficiencia productiva.

3ª. Que la enseñanza primaria o elemental debe, lo mismo que la secundaria y superior, conservar sus características y finalidades propias, sin perjuicio de las relaciones que la ligen y articulen con otras esferas educacionales inmediatas.

4ª. Que la enseñanza industrial debe organizarse como un sistema aparte, con autoridades dirigentes propias, pero, armonizada de tal manera con la escuela primaria, que ofrezca un tránsito natural para los que quieran ir de éstas a los centros educacionales que se ocupan de la primera.

5ª. Que dicha enseñanza debe regularse de modo que ofrezca dos grados sucesivos, pero completos cada uno, de preparación y de adelanto: el primero o elemental, propio como para la formación del obrero de las filas; el segundo o superior, adecuado como para aquellos que con sus estudios quieren llegar a ocupar posiciones dirigentes.

¿CUÁL DEBERÁ SER EL LUGAR DE LA INSTRUCCIÓN INDUSTRIAL EN EL SISTEMA ESCOLAR DE LAS REPÚBLICAS PANAMERICANAS?

Por JOAQUÍN CABEZAS.

Director del Instituto Superior de Educación Física de Santiago de Chile.

Entiendo que el espíritu del tema propuesto por el Segundo Congreso Científico Panamericano para que el infrascrito diga su opinión al respecto, se refiere a la instrucción industrial en el sentido de enseñanza de un oficio determinado en un taller. Considerada así la cuestión, me parece lógico descartar del tema las profesiones que dicen relación con el comercio y la agricultura.

La escuela primaria panamericana, por regla general, comprende seis años de estudios repartidos en tres grados de dos años cada uno. Normalmente el niño se incorpora a la escuela a los 7 u 8 años y se retira a los 13 o 14.

Voy a considerar la escuela moderna, con su plan de estudios integral y dando en sus programas al trabajo práctico la importancia que debe tener, a fin de preparar convenientemente al niño para la lucha por la existencia.

Por muy intuitiva que haya sido la enseñanza, por bien concebidos que hayan sido los programas y métodos puestos en práctica, ciertamente el niño a los 13 o 14 años no estará maduro para que de la escuela pase directamente al ejercicio de una profesión industrial. El fin general de la escuela primaria ha impedido toda especialización; el maestro ha cuidado con igual criterio el desarrollo intelectual, moral, físico, social y técnico del niño.

¿Qué tanto por ciento termina el tercer grado y cuántos quedan con los conocimientos elementálsimos para la vida que la escuela da en los grados inferiores? ¿A dónde van estos niños?

La gran mayoría no estudia más y la vida los toma y los envuelve en su inmenso torbellino. Como en la mayor parte de los países americanos la instrucción no es obligatoria, o lo es sólo en el nombre, y como no existe la obligación de asistir a las escuelas complementarias, porque no las hay, estos niños van a aumentar el número de reclutas o a llenar los empleos en donde la inteligencia no desempeña papel alguno de mediana importancia. El medio ambiente en que vivirá el joven, las tentaciones miles que le ofrecen los cafés, la literatura malsana, y las películas de biógrafos que relatan o muestran inmoralidades, escenas espeluznantes y crímenes, apagan primero y contrarrestan después las buenas inclinaciones que la escuela o el hogar habían logrado inculcar en él.

Muchos niños escapan felizmente, pero miles naufragan en las tempestades de la vida, sobre todo los que no han tenido un hogar digno de este nombre.

Esto no puede, no debe continuar así. Si la familia, los particulares y la sociedad no pueden remediar esta situación, el Estado debe intervenir, debe tomar al joven, cuidarlo y guiarlo hasta haber hecho de él un elemento útil para la sociedad y para la patria.

Se impone, pues, la necesidad de reglamentar las condiciones de admisión de los niños al trabajo y de hacer obligatoria la enseñanza técnica o profesional hasta los 18 años. El legislador no autorizará la entrada de los menores al taller sin que posean el grado de instrucción correspondiente a los estudios primarios.

Al lado de estas medidas de carácter restrictivo deben considerarse otras tan eficientes o más que éstas, o como el problema de las habitaciones para obreros, la creación de bibliotecas populares, la lucha contra el alcoholismo, la revisión de los programas de enseñanza desde el punto de vista de la calidad y de la cantidad y la creación de escuelas nuevas en las cuales los jóvenes puedan continuar sus estudios primarios y en donde adquieran los conocimientos y habilidades que sirvan de puente de unión entre la escuela de hoy día y la vida industrial.

Estas escuelas existen en Estados Unidos y en varios países de Europa.

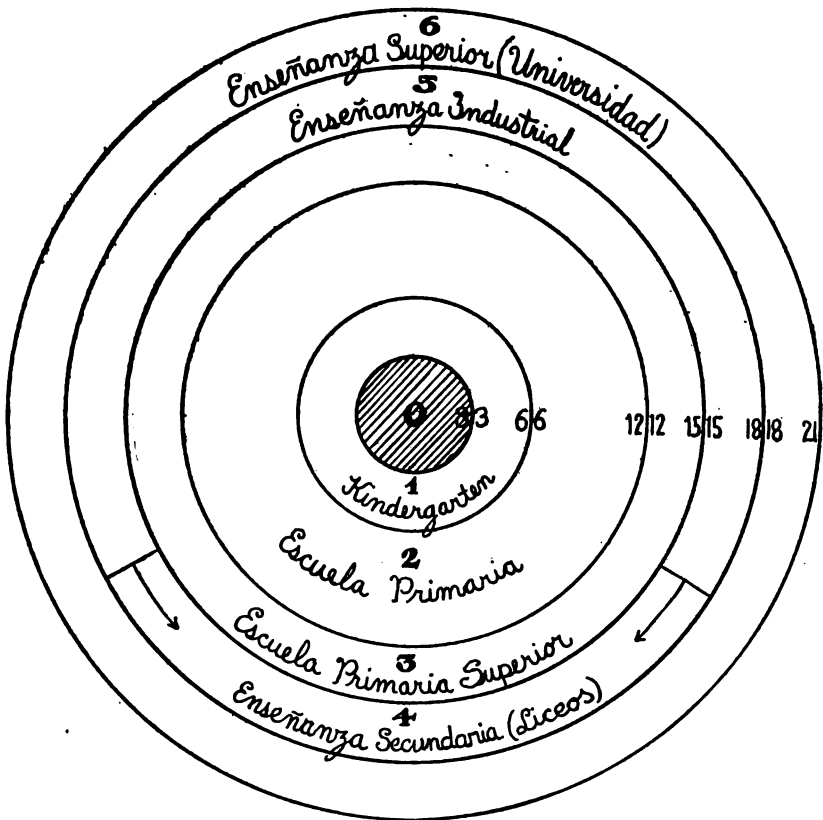
Están organizadas de manera de poder recibir un gran número de niños, puesto que todas tienen asistencia alternativa, es decir, los jóvenes frecuentan la escuela un día o dos y los restantes de la semana trabajan en una fábrica o en un taller. En la escuela se inculca a los jóvenes los conocimientos científicos y artísticos aplicables a las industrias y a los oficios; se amplía la instrucción cívica y social, y sobre todo, se les asegura la formación del carácter y la educación moral. El programa de estudios se basa principalmente en una nueva trilogía en donde los trabajos manuales ocupan lugar preferente, las matemáticas y el dibujo el segundo puesto. Se procede así porque estos tres ramos son la base esencial de toda producción en la mayoría de los oficios.

La práctica profesional, la habilidad técnica, la obtiene el joven en la fábrica bajo la dirección de maestros experimentados.

La duración de los estudios en estas escuelas varía, pero en la mayor parte los programas se desarrollan en tres y cuatro años, con asistencia de 8 a 9 horas semanales en un solo día.

Los educadores y patrones están de acuerdo en considerar poco prácticas las escuelas industriales nocturnas porque el joven obrero llega a los bancos fatigado con el trabajo del día y carece de las fuerzas necesarias para sacar provecho de la enseñanza que se da en la sala de clase.

En resumen, soy opinión, que la enseñanza industrial tenga su base en la enseñanza general que da la escuela desde el jardín infantil hasta la terminación de los estudios primarios, siempre que se dé en los programas, lugar preferente a la enseñanza de los trabajos manuales, de las matemáticas y del dibujo. Todos los niños, cualquiera que sea el oficio que abracen más tarde (obreros, contra maestros, directores o patrones), deben recibir la misma educación hasta los 15 años: instrucción primaria completa y principios comunes a todos los oficios. A partir de este punto el



niño tiene dos caminos, la enseñanza industrial y las carreras profesionales. A los 18 años los más inteligentes podrán comenzar un nuevo ciclo de estudios, el de las escuelas universitarias.

El esquema anterior sintetiza nuestra manera de pensar y en él señalamos el lugar que le corresponde a la enseñanza industrial en el sistema escolar completo.

Es evidente que si la enseñanza industrial es obligatoria y así lo establece la ley, los alumnos asistirán a los cursos sin pagar derecho alguno. Las escuelas industriales, como las primarias, deben ser absolutamente gratuitas.

Los fondos para el sostenimiento de las escuelas industriales podrían obtenerse (erido un impuesto especial sobre un artículo de consumo de primera necesidad,

como la sal u otro, cuya inversión única se destinaría a este objeto. Así se evitaría que en ningún caso la educación industrial estuviera expuesta a los vaivenes de las crisis económicas de una nación.

Acepto también el sistema seguido en algunas escuelas, por ejemplo, las organizadas por Kerschesteiner en München, es decir, que los gastos de los talleres sean costeados por los jefes de las fábricas o bien por las sociedades sindicales, siempre que (si éstos se apropian de los artefactos, sea para la venta o para emplearlos en sus fábricas) suministren la materia prima necesaria, no sólo para elaborar el objeto o pieza de estudio, sino la suficiente para abonar con ella el valor de la mano de obra. Así podrá tener la escuela el material necesario para que el alumno repita un trabajo echado a perder por cualquier causa. Esta combinación se ideó para impedir la competencia que las escuelas pudieran hacer a la industria privada con la venta de los artefactos elaborados en sus talleres.

La industria moderna está caracterizada por la producción abundante y rápida en la cual la máquina domina. Esta se hace cada año más poderosa, más delicada y más precisa. Ha llegado ya a una perfección tal, tan exacta y formidable en sus efectos, que para manejarla se necesitan operarios inteligentes, científicamente preparados y verdaderamente diestros para que sepan apreciar su producción y lleguen a dominarla a fin de que rinda el máximo de su actividad febril.

Antiguamente los obreros no podían cambiar de profesión: los operarios se especializaban en un oficio y conocían todos sus secretos. Hoy día, la categoría de obreros completos forma la excepción.

A medida que la máquina entra en la industria moderna, cada profesión se subdivide al infinito; el trabajador no podrá quedar circunscrito toda su vida a una profesión, deberá conocer varias a fin de atender distintas máquinas a la vez y para preverse de la cesantía que puede ocasionarle la división del trabajo o la aparición de una nueva máquina que lo reemplace.

Las fábricas, por eso, cuentan ahora con dos clases de operarios: unos de cultura técnica general y manual profunda, que salen de las escuelas técnicas, se forman en las grandes empresas industriales, como es el caso de la fábrica de locomotoras Baldwin, la Westinghouse Electric Works, etc., o se contratan en el extranjero, y otros, la masa obrera, hábiles en la ejecución rápida, automática y perfecta de las operaciones fragmentarias.

Organizada la escuela industrial, como dijimos más arriba, en combinación con las fábricas, el futuro operario está en contacto con el trabajo moderno y la escuela al tanto de sus nuevas exigencias; como ella debe ser ante todo utilitaria, no perderá de vista lo que sus alumnos necesitan, agrupará, en consecuencia, los oficios que tienen estrecha conexión entre ellos y les enseñará los principios esenciales que los dirigen.

Es cosa sabida que existe un paralelismo entre el desarrollo mental de un individuo y la facilidad con que él ordena y hace accionar su musculatura. Es pues de gran utilidad para el operario que la escuela atienda, conjuntamente con la habilidad manual que le da el trabajo de la fábrica, a la educación del cerebro a fin de perfeccionarlo. Las máquinas estarán así mejor manejadas, trabajarán más rápidamente y la diferencia entre el rendimiento teórico y el que los obreros logran hacerle producir, será la más pequeña posible.

La escuela industrial habrá cooperado de esta manera al progreso de las industrias y de las fábricas, educando e ilustrando a sus alumnos y haciendo que cada individuo contribuya con su saber y su actividad inteligente a la producción máxima que debe dar la unidad fabril de que forma parte.

En la Universidad del Trabajo de Charleroi, of de M. Buyse que los industriales productores de máquinas herramientas, mandaban a la escuela industrial un ejemplar de las nuevas invenciones o de las máquinas que habían sufrido transformaciones para mejorar su rendimiento. Se las instala convenientemente y se las hace trabajar bajo la dirección de un técnico especialista. Si la máquina ha funcionado bien y

probado durante un tiempo más o menos largo su eficiencia productora, un profesor de la escuela da conferencias sobre ella y sus méritos y abre un curso para contra-maestros u operarios hábiles a fin de enseñarles su manejo y ayudar en cierta escala, al desarrollo de la industria relacionada con esa nueva máquina. He aquí otro medio de que puede valerse la escuela industrial para cooperar al progreso de las fábricas y al mejoramiento de los obreros.

La recíproca de esta parte del tema, es decir, cómo las industrias pueden facilitar el aprendizaje práctico de los alumnos de las escuelas industriales, es fácil deducirla de lo dicho más arriba.

Sin embargo, expondré en general, lo que ocurre en Estados Unidos, especialmente en las grandes fábricas Baldwin, Brown & Sharpe, Westinghouse Electric, que nos dan un brillante ejemplo de lo que puede el esfuerzo individual y de cómo la industria coopera a la educación sistemática del aprendiz.

La fábrica moderna, obligada por la competencia y la necesidad de producir mucho y barato, necesita ocupar dos clases de operarios para atender a la buena marcha de la fabricación: al especialista y el obrero completo. El primero guía y observa la máquina herramienta que ejecuta una sola operación; este hombre permanece un año tras otro en el mismo puesto, adquiere una habilidad asombrosa. El segundo es el operario técnico con conocimientos científicos sólidos, indispensables para el progreso de la fábrica, el mejoramiento de las instalaciones y el perfeccionamiento de la maquinaria.

El obrero especialista forma la masa, sale del niño que ha frecuentado sólo la escuela primaria y posee una inteligencia vulgar. Este operario no necesita pasar por escuela especial alguna; lo forma el taller, la fábrica, después de ensayarlo en varias máquinas para conocer sus aptitudes. Hay dentro de este grupo jóvenes que han hecho iguales estudios, pero que demuestran, inteligencia, espíritu de observación, independencia en el trabajo. Estos jóvenes son los que deben ir a la escuela industrial de cualquiera de los tipos modernos: asistirán a los cursos de la tarde (5 a 7, 6 a 8) o, de preferencia, a los que se organicen con asistencia de uno o dos días a la semana. La fábrica se desprende de ellos por uno o dos días, pagándoles su salario o reduciéndolo en un tanto por ciento. La enseñanza que la escuela industrial les da, hace más eficiente su trabajo, aumentando la producción, asegura su permanencia en el taller y los habilita para que aumenten sus entradas, justa recompensa de sus esfuerzos personales.

El obrero completo se recluta entre los jóvenes de 18 años que han terminado sus estudios secundarios y poseen una instrucción científica de primer orden. Estos jóvenes trabajan en los talleres como los anteriores y asisten a las escuelas industriales de la tarde. Estos van a ser los futuros jefes de talleres, y los que ocuparán los puestos de mayor responsabilidad en las fábricas.

Hay además otra categoría de operarios que trabaja bajo la vigilancia inmediata de los contra-maestros quienes les enseñan todos los secretos de la industria a fin de evitarles toda pérdida de tiempo en su aprendizaje. Estos son los jóvenes con diplomas de ingenieros mecánicos de las escuelas técnicas superiores. Principalmente de entre ellos se recluta el personal superior. Sin embargo, las otras categorías pueden también suministrar el alto personal técnico; la industria americana abre sus puertas a todos los que se hacen capaces por su instrucción, adquirida aun en las escuelas nocturnas, y que se juzgan aptos por sus merecimientos personales para dirigir grandes o pequeñas industrias. Se dice que el director de la Baldwin Works es un vivo ejemplo de esta característica americana: ascendió paulatinamente desde su sitio de obrero al puesto de director general de una de las más grandes fábricas de Estados Unidos.

CONCLUSIONES.

I. La educación industrial deberá tener su base en la enseñanza general que dé la escuela, para lo cual se dará lugar preferente en los programas a la enseñanza manual y al dibujo.

Para conseguir mejor este propósito, los diversos grados de enseñanza, jardín infantil, escuela primaria, liceo, escuelas técnicas e industriales, universidad, se unirán unos con otros de tal manera que formen un todo armónico.

II. La escuela industrial, propiamente dicha, será una continuación de la primaria y tendrá una organización aparte en combinación con la enseñanza práctica que dé el taller o la fábrica.

III. La ley reglamentará las condiciones de admisión del niño al trabajo y hará obligatoria la enseñanza técnica o profesional hasta los 18 años.

IV. La enseñanza industrial será gratuita. Se costeará con los dineros que produzca un impuesto especial extraordinario.

V. La escuela industrial trabajará en combinación con las fábricas y completará la enseñanza técnica dando a sus alumnos los principios esenciales de los oficios.

VI. Los establecimientos fabriles deben dar facilidades a los aprendices para que completen sus conocimientos técnicos en las escuelas industriales, sin perjuicio que puedan ellos mismos organizar cursos de perfeccionamiento dentro de sus propios talleres.

¿CUÁL DEBERÁ SER EL LUGAR DE LA INSTRUCCIÓN INDUSTRIAL EN EL SISTEMA ESCOLAR DE LAS REPÚBLICAS AMERICANAS?

Por HENRY METTEWIE,

Profesor de Trabajos Manuales de Cochabamba, Bolivia.

La instrucción industrial puede o podría darse en dos lugares: el taller o la escuela. Vamos a ver cuál de los dos presenta menos defectos y más ventajas en la República americana.

El primero parece en las Repúblicas sudamericanas, sobre todo, presentar muchas desventajas:

Desde luego, no existe en todas partes, y más de un pueblo importante recurre al extranjero para todos, o casi todos los artículos manufacturados, sin tener siquiera una carpintería o herrería instalada en buenas condiciones. Donde existe un taller, éste es casi siempre reducido e incompleto y no puede formar sino los obreros que necesitan aprender los trabajos especiales a los cuales se ha consagrado dicho taller, el cual está organizado de manera de no tener "vacíos:" el trabajo principiado por el uno pasa al otro, y así hasta que queda terminado. Un ausente, un perezoso, lo mismo que una gran serie de obreros quedan, momentáneamente, sin ocupación. En estas condiciones no hay tiempo para poder dar un consejo, mostrar un "tour de main" a un aprendiz; y por tanto, se dice corrientemente que éste "no aprende, sino "roba" su oficio."

Si el ejemplo del trabajo constituye aquí la "lección," no siempre todos los obreros trabajan bien; es decir, que en algunas partes de la América del Sur los obreros "del país" siguen procedimientos rutinarios, y sólo los obreros europeos, de mala calidad, vienen a instalarse al lado de los primeros (hay excepciones rarísimas en esta regla, dado que todos los buenos obreros encuentran en otros países empleos ventajosos) y así el aprendiz recibe malas lecciones, se deforma; y más vale no formar que tener que deformar.

Suponiendo que se encuentren buenos obreros a fin de dar con ellos buen ejemplo, sabido es que el buen obrero no enseña con gusto lo que él mismo ha aprendido con dificultad, y que una vez transmitido a los demás le tiene que crear competidores.

En esas condiciones, es imposible contar con la enseñanza en los talleres privados.

Se presenta entonces la siguiente cuestión: ¿Podría indemnizar el Gobierno al maestro del taller en pago del tiempo que consagra éste último a la formación de los aprendices? Siendo así, tal vez una parte de los inconvenientes señalados desaparecería. Sí, pero entonces la mayoría de los talleres se clasificarían en la categoría

de incompletos, por estar compuestos de obreros mal pagados, etc., ¿Por qué, pues, subvencionar una obra que contiene tantos desperfectos, si hay otros medios más convenientes que nos lleven a un resultado mejor?

El sistema de enseñanza técnica en el taller puede, sin embargo, dar excepcionalmente buenos resultados: pongamos el caso de las fábricas que contienen centenares y aun miles de obreros empleados, donde, gracias a un sistema especial de "turnos" se ha logrado instalar, al lado de los talleres, verdaderas escuelas industriales, en donde una parte de los contramaestres forma a los jóvenes obreros a fin de obtener de ellos el mayor beneficio, lo mismo que de la fábrica: si los aprendices logran descubrir y perfeccionar sus aptitudes, aquélla se aprovecha de la preparación de sus empleados. Es inútil, en la mayoría de los casos, subvencionar estas instituciones tan útiles. Ya cada quien, aquí, ha encontrado su provecho. Además, como ya he dicho, ese sistema sólo se puede emplear en fábricas muy importantes, y, en Sud-América, esas fábricas son raras.

Una vez abandonado el sistema de enseñanza industrial en el mismo taller, nos queda la escuela. Se nos presentan dos organizaciones, y quizá, tres: la escuela privada, la subvencionada y la organizada por el Estado. Aunque la cuestión sea más compleja de lo que parece, opto sin vacilar por la última de esas escuelas.

He dicho que la cuestión es más compleja de lo que parece, porque, en efecto, si casi todos los países admiten que la instrucción primaria debe ser gratuita y organizada por el Estado, también hay países, bastante numerosos, donde la instrucción secundaria no está considerada de la misma manera; la instrucción superior, menos todavía, y estimo que la educación industrial es, en algunos casos, igual a la secundaria o la superior. Si las costumbres de un país han hecho de la instrucción secundaria y superior un artículo comercial, obedeciendo a la ley de la oferta y la demanda, dejando al padre de familia lo mismo que al joven y al ciudadano buscar sus conocimientos en el establecimiento que le agrade, se podría estimar que la instrucción industrial debe, a igual título, darse en escuelas privadas. La existencia de estas escuelas; el éxito que han alcanzado en algunos casos, nos dan la prueba de que el sistema debe ser defendido. Estimo, por mi parte, que en esas mismas condiciones, el sistema de organización por medio del Estado es el que debe tener la preferencia. ¿La razón? La escuela privada es para sus organizadores un medio por el cual siempre se procuran rentas, las cuales son más grandes aún que si ellas se hubieran obtenido trabajando por cuenta del Estado; en ellas tienen dos medios para procurarse esas rentas: hacer pagar a los alumnos por derechos de inscripción, de exámenes, etc., o bien por producir y vender. En la mayoría de los casos, el que es hijo de obrero nada puede pagar por su instrucción; más bien está dispuesto a ganar mientras la adquiere. Sólo aquellos que tienen padres que son lo suficientemente ricos, pueden trabajar sin necesidad de ganar entretanto, y, además pagar sus estudios. Pero éstos tampoco están contentos con la posición de obreros. Si algunas escuelas costosas se han intitulado "Escuela Industrial," no deben ser consideradas como tales. En ellas se forman ingenieros civiles y electricistas, mecánicos, etc., y en realidad dichos planteles no son sino "universidades industriales." No deben extrañarnos esos equívocos en la clasificación de las escuelas; muy pocos países, hasta ahora, han podido organizar por completo su enseñanza, según un plan general bien extendido, con programas seguidos y especializados, de manera más o menos marcada a medida que van acumulándose los años de estudio; con programas concebidos de tal manera que, cualquiera que sea la vía escogida, se puedan seguir sin "vacío," sin "salto": desde la escuela infantil hasta la universidad. Y así más de una escuela se intitula "escuela industrial" y se clasifica como "escuela politécnica" o universidad, que por preparar a profesiones lucrativas exige un fuerte pago.

La verdadera escuela industrial o técnica no puede proceder de esa manera, pues sabemos que más de una vez paga a sus alumnos un pequeño sueldo. Sus rentas las obtiene de la venta, y de ahí sus defectos: introducción de la división del trabajo; aprendizaje mecánico de una parte ínfima del oficio escogido; producción rápida para el

comercio; sueldo a los alumnos, el cual a la vez que irrisorio demuestra una vergonzosa explotación de la infancia. La buena preparación de los alumnos consiste primeramente en prepararlos de una manera general, la cual se va especializando más y más; pero como ésta disminuiría paulatinamente la calidad y cantidad de los productos, va en contra de la organización comercial de la escuela en la cual no entran esas pérdidas. En la mayoría de los casos los alumnos salen de la escuela, después de dos o tres años de estudios (?) para convencerse que han sido engañados, Piden al taller un sueldo mayor que aquel a que les dan derecho sus mal adquiridas aptitudes; viajan de un taller a otro, de un oficio a otro, y acaban por perderse para siempre.

Queda la escuela subvencionada: el Estado indemnizando al personal docente de ella. La pérdida ocasionada por un estudio cuidadoso, progresivo, desaparece * * * pero el beneficio de los organizadores subsiste aún.

¿Por qué entonces el Estado mismo no organiza por completo la Escuela, pagando y recibiendo—como debe ser la situación de todas sus instituciones—a fin a de gastar poco para obtener mucho?

En la escuela organizada según el último sistema, primero, el Estado paga la instalación (gasto único), el sueldo de profesores y alumnos y, segundo, los programas y su aplicación, el trabajo personal de los alumnos, y a la vez obtiene el producto de las ventas.

El resultado pecuniario, lo mismo que los gastos de instalación, una vez hechos, difieren según los lugares, los oficios enseñados y los métodos enseñados.

Los defectos de todos los otros sistemas desaparecen con una buena organización; la instalación se hace de manera tan completa como la desea el Estado; tan racional, científica y pedagógica como lo requieren las necesidades del centro del país donde se implanta. Vemos, por tanto, que sólo el Estado es el único que puede organizarla así para poder respetar los intereses del "capital" y el "trabajo;" pues la organización de las escuelas industriales toca de manera íntima los más delicados problemas de la Economía política.

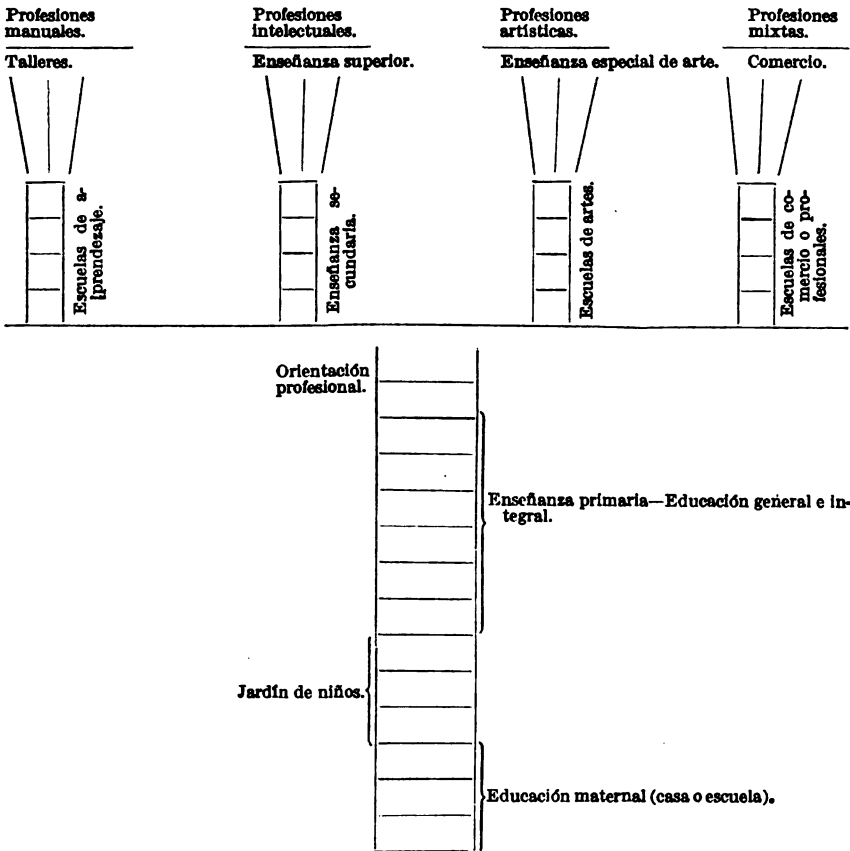
Así la escuela industrial o técnica tiene que ser el lugar de la instrucción industrial; y esto tiene que ser más acentuado en las Repúblicas americanas que en otros países donde el Estado tiene que intervenir pecuniaria y prácticamente en la organización

Lo que he dicho de la formación de programas de enseñanza muestra suficientemente mi creencia de que la instrucción completa debe formar un sistema único. Su organización incumbe al Estado. La instrucción industrial no puede quedar separada de la organización pública. Podría parecer extraño que mientras todos hablan de la escuela como el más grande elemento de la vida, nada o casi nada han hecho prácticamente en favor de ella; la prueba es que la casi totalidad de los jóvenes de 14 a 18 años—y aun de más edad—dejan la escuela sin haber adquirido un oficio. La causa de esto es, por una parte, la mala organización de las escuelas secundarias; por otra, la ausencia de escuelas técnicas; el joven que puede estudiar hasta los 15 o 16 años de edad no encuentra sino la escuela secundaria para continuar sus estudios. En dicha escuela secundaria lo preparan para ingresar a las universidades. En muchos países con la organización escolar actual, la universidad es la única que da títulos por medio de los cuales se obtienen empleos determinados. Las otras profesiones se enseñan en el taller, después de pasar por muchas etapas inútiles. Por ejemplo, el litógrafo antes de conocer su oficio, sirve de mensajero, lava las máquinas, transporta las piedras, corta y empaqueta los trabajos, tira las hojas de papel, hace de ayudante y, en fin, "aprende su oficio." La escuela industrial, o mejor dicho, técnica, viene a colmar un vacío, preparando por completo a sus alumnos para la vida, y completa el cuadro resumiendo el sistema público escolar. Con la organización así resumida, desde su nacimiento hasta su organización profesional completa, el joven encontrará la escuela que aumente sus conocimientos y, perfeccione sus aptitudes. Los programas que al principio eran generales se especializarán poco a poco, pues desgraciadamente su clasificación es incompleta y artificial: más de un oficio es a la vez manual e intelectual (arquitecto), manual y artístico o intelectual y artístico. Cada rectángulo representa

un año de estudios. Imperfecto como es el cuadro,¹ sin embargo, la noción de lo que debe ser un sistema público escolar completo, fija el lugar de la instrucción técnica y muestra claramente la necesidad de una dirección única, sin la cual, parte del mismo sistema queda sin cohesión con sus vecinas o sin encadenamiento con sus precedentes.

Los primeros años educan integralmente al alumno, desarrollando los ramos siguientes del saber humano: hasta los doce años: la escuela maternal, el jardín de niños y la escuela primaria. Los dos años siguientes son de "orientación profesional," durante los cuales los profesores ayudan al alumno a descubrir sus propias aptitudes. A los 14 años el niño escoge o el taller o una de las escuelas en la cual ha de principiar su especialización.

A las escuelas de aprendizaje se les da también el nombre de "escuelas de artes y oficios," "escuelas técnicas," "escuelas industriales." Las escuelas de enseñanza superior son las "universidades." Las escuelas de artes, las academias, los conservatorios y las escuelas de comercio son también llamadas "escuelas profesionales."



¹ El autor presenta aquí un diagrama de un círculo cuyos tres segmentos designa: Artes, Ciencias e Industrias. Bajo estos encabezados se incluyen las materias siguientes: Artes danza, música, poesía, arte dramático, arquitectura, escultura, pintura; Ciencias-matemáticas, mecánicas, astronomía, física, química, biología, sociología; Industrias-armas, herramientas, alimentación, vestidos, habitación, mobiliario, cambios, transportes, artes intelectuales.

Las tres partes del diagrama descrito denominadas: "Artes, industrias, ciencias" se encuentran también en el esquema que se acompaña. Además el último contiene la subdivisión de "oficios mixtos o comerciales."

Es inútil hacer observar que las escuelas de arboricultura, agronomía, etc., son las escuelas profesionales y que las escuelas superiores de comercio, son escuelas de enseñanza científica o de enseñanza superior.

Hasta ahora la preparación a las profesiones intelectuales y artísticas ha sido estudiada y alentada. La creación de las escuelas profesionales (comercio) y técnicas es más reciente; tienen sobre las primeras una ventaja; mientras esas guardan sus tradiciones, que en muchos casos no son sino "rutina," las escuelas profesionales y técnicas benefician todos los adelantos realizados, tanto en la industria misma como en la pedagogía y los medios de enseñanza. No nos extrañemos entonces de que tanto se discuta sobre la cuestión de "saber" si las escuelas técnicas adoptarán el sistema económico o el pedagógico: el primero trasporta el taller a la escuela, y guarda muchos de sus defectos; su fin es la venta, la producción, que le hace muchas veces olvidar el lado pedagógico: el segundo prepara a los alumnos según un método científico, pero muy diferente del del taller y es muy costoso. El sistema económico pedagógico tiene las ventajas del uno y del otro; instruye al alumno según las indicaciones de la pedagogía, yendo de lo fácil a lo difícil; haciendo observar, comparar, analizar y sintetizar; busca una serie de trabajos graduados, clasificados; aplicaciones de hechos, pero trabajos prácticos escogidos de manera que su venta sea posible y remuneradora. Para ese sistema la venta no es un fin, sino un medio; su organización es muy difícil: exige profesores técnicos, bien preparados, perspicaces e inteligentes.

Bajo el punto de vista de la venta, la escuela es un comerciante. Pero ese comerciante vigilado por el Estado tiene deberes dictados por la misma situación de escuela, cuyo móvil es ayudar la industria, es decir, a los obreros y a los contratistas; no puede vender a precio bajo; tiene que buscar la producción de artículos raros y útiles en el país, con objeto de hacer fácil y lucrativo el establecimiento de su fabricación.

En la América del Sur, tributaria del extranjero en una infinidad de artículos esa venta vendría entonces a ser una cosa facilísima. Llegando a esas condiciones la escuela podría aceptar pedidos y hacer ofertas a cualquiera que sea o no maestro de taller.

El mejor medio para evitar dificultades es, llamar, para dirigir la escuela, a un comité formado, en número igual de obreros, de maestros y profesores; estos últimos pueden ser profesores que hayan hecho estudios técnicos, u obreros que tengan nociones de pedagogía, ingenieros, etc. Prefiero a los primeros, por haber observado que un profesor joven e inteligente puede aprender un oficio con facilidad, mientras que un obrero inteligente encuentra más dificultad para aprender a enseñar; un buen profesor que sea bastante buen técnico me parece valer más que un obrero que sea bastante buen profesor. Mientras el uno, en la calma, muestra el camino y hace trabajar, el otro, en el desorden, muestra un trabajo que ninguno observa o imita.

En cuanto al método, no lo hay especial para enseñanza alguna; el método es único para todas las edades: el alumno debe observar, razonar y aplicar, verificando, por medio de la aplicación, la realidad de sus conocimientos. Sensible es que en nuestra época se aprenda todavía a injertar, leyendo; a observar (?) las deformaciones, perspectiva de los campos, leyendo; a estudiar las resultantes de las fuerzas, leyendo también; mientras se podría observar, reflexionar y aplicar.

La instrucción en el comité escolar del elemento obrero y de los "patrones," disminuye también los riesgos de error por parte del personal: conocedores de las necesidades de su oficio, los miembros del comité recordarán al cuerpo docente el lado práctico de sus estudios. Llamando, además, a un delegado del Estado quedan resguardados todos los intereses; en caso de división del comité, en caso de discusión, el delegado es el que decide. Las cuestiones no son raras en que los empleados y contratistas entran en pugna creyendo defender sus intereses. Como especial cuestión señalo la de reglamentación del aprendizaje. El comité decidirá las condiciones; fijará el número de alumnos que se puedan aceptar; las condiciones de salida, el número de alumnos con diploma, al conocer las capacidades y condiciones de cada obrero, lo mismo que las

necesidades de cada taller y de esa manera buscará el obrero más conveniente para el empleo que se necesite; fijará el sueldo de los profesores, de los alumnos, el precio de venta de los objetos fabricados e indicará los cursos útiles, etc.

La escuela constituirá también una enseñanza para los contratistas donde ellos obtendrían las mejores condiciones para una buena instalación y una buena producción, favorables ambas a la compra de la materia prima, a la venta de artículos confeccionados; pues entonces hasta podría realizarse en la misma escuela la instalación de fuerza motriz, en pequeña escala, a fin de mantener talleres y dar ejemplos de instalaciones típicas.

La comisión escolar se completará de la manera siguiente: Un consejo técnico en cada centro importante; un consejo técnico en cada provincia; un consejo técnico general en la capital del país.

Con el estado actual de la enseñanza no es posible obtener una organización escolar definida de la manera anterior. Cuántos aprendices, obreros y medios obreros, hasta nuestros días, no han podido prepararse debido a la falta de buenas escuelas * * * cuántos otros no pueden entrar en esas escuelas, viéndose obligados, al salir de la escuela primaria, a meterse al taller. Para esos es para los que se necesita la escuela industrial nocturna, que les procure lo que el taller no puede darles: nociones de tecnología, matemáticas, dibujo técnico y trabajos de taller.

Eso todavía no basta; es menester la ayuda del Estado. Hay necesidad de formar círculos dedicados a los estudios profesionales, que procuren a los antiguos alumnos los medios para conocer los últimos adelantos realizados en su profesión: máquinas nuevas, procedimientos nuevos, etc., o bien la manera de conservar las nociones teóricas y prácticas que han recibido, y que no pueden aplicar en sus talleres. De esa manera, la escuela, después de haber formado obreros que estén al corriente de su oficio, los impulsará para que éstos no se encuentren atrasados en un momento dado. Los jefes de taller y los contratistas han de ver también, con interés, que se pruebe, bajo la dirección de profesores competentes, el valor de los nuevos procedimientos que se introduzcan en cada ramo, a fin de cerciorarse de las ventajas que ofrezcan en la práctica la nuevas introducciones. Si una introducción rápida suprime un gran número de obreros, éstos deben pedir que esa introducción se efectúe gradualmente. Y así, la escuela será, ante todo, un lugar para la buena enseñanza lo mismo que un medio para evitar las dificultades que siempre nacen del antagonismo entre el capital y el trabajo; y por este medio se podrán estudiar los problemas económicos e industriales, que vendrán a ser solucionados con todo el sentido de justicia y equidad. Así concebida esta "escuela," exige la colaboración de todos para poder colaborar con todos en provecho de todos.

INDUSTRIAL EDUCATION FOR LATIN AMERICA.

By HAROLD E. EVERLEY,

Special Agent Bureau of Foreign and Domestic Commerce, Department of Commerce.

One of the important national problems of Latin America is the promotion of industrial education. While excellent engineering schools, commercial colleges and universities are provided for young men who wish a professional or liberal education, there still exists a condition which is retarding the progress of the industrial people, menacing the efficiency of the industries and the prosperity of these nations.

The tendency of a large proportion of intelligent young people to enter the legal and medical professions, together with existing social prejudice against trades has robbed these nations of their best talent in those fields in which they stand in greatest need of carefully trained men and women. As a result, enterprises requiring constant application and assiduous attention are, in many cases, in the hands of foreigners.

In Brazil there is a city of more than 100,000 inhabitants whose light and power-plant is under English control; the construction of its new street railway is in the hands of foreigners; its great modern docks are being constructed by the French; and the deep dredging carried on in the southern part of the country is under European management.

If Latin America is successfully to compete with Europe, it must educate its men to develop the great natural resources and acquire that industrial independence which is so important to a nation. The promotion of almost every industrial enterprise depends largely upon machinery, but the manufacture of this in these countries is very limited. All the materials needed to develop a great steel industry are provided by nature, yet the industry does not exist because of the want of trained men.

Industrial training as a part of the regular curriculum is the supreme need of the schools of Latin America. The present system of education is characterized by the lack of practicability and directness.

With but few exceptions the elementary school leads only to the secondary cultural school, and this in turn to the university or professional school. As a result there is produced a supply of people with general culture but without ability to give adequate assistance in the more vital activities. Able minds are deflected from productive occupations, and young men are caused to disregard industrial life and enter vocations for which they have no natural ability, while the industries remain unable to meet the demands made of them.

No one has stated the case more plainly than Senor Orrego Succo, a Chilean writer, whose remarks apply as aptly to the other Republics of the southern continent as they do to his own. He says, "We do not try to prepare the youthful minds for the daily struggle of existence, to teach young people along lines really practical, that bear upon industry and upon making use of the active forces of the country. On the contrary, before everything else we turn out academic debaters, aggressive rhetoricians, and voluble talkers."

INDUSTRIAL EDUCATION SHOULD BE A FUNCTION OF THE ELEMENTARY PUBLIC SCHOOL OF LATIN AMERICA.

Industrial education has for its aims the instilling of ideas, volitions, and feelings which all citizens should have concerning industrial life, and the giving of common knowledge, experience, and appreciation, which are necessary to effective living.

In the first six grades its purpose is not to give skill in any activity, but to afford general information concerning raw materials, how they are used in the industry, some knowledge of the processes, and a study of industrial life. It is parallel to historical, geographical, and mathematical education. It brings the work of the school into closer relationship with the activities of the world and the interests of the child.

Because such instruction is desirable for all classes of people, industrial education should be a function of the elementary public school. No separate institution can ever be so effective. No school designed to minister to a single class of people and to a single line of interest can ever be well equipped in the fundamental arts and sciences as one designed to minister to a variety of interests.

At the age children usually begin systematic study their interests are common and general, and their education should be undifferentiated on the basis of either social or industrial life. It is at just this age that the fundamentals of sympathy for and appreciation of industrialism should be taught through a study of the industries. If this is done during the first few years of a child's life, the future citizen will know more of the true relationship of industry, production, and society, and will feel that earning a livelihood by any respectable labor is honorable.

The writer had personal experience with a young man who showed talent for cabinetmaking and was doing well in one of the large furniture establishments of

Brazil. The boy decided to leave his trade and became a dentist. The change was made, not because he would earn more money nor because he could do the work better, nor even because he liked dentistry more, but for the reason that he felt his work in the shop was not respected. Two years later we heard of him as office boy for a leading dentist in one of the large cities. He was an excellent cabinet-maker changed into a would-be dentist who never could be more than an assistant.

This is by no means an exceptional case; it is the experience of many boys who, like this one, have had no early opportunity for industrial education and who, therefore, do not appreciate the value and importance of the trades. It is exactly such mistakes that industrial education in the elementary school tends to eliminate by correcting the feeling against labor.

Not only does industrial education instill respect for work with the hands, but it opens the mind and causes one to seek farther for knowledge. It has been the experience of the writer that these young men who have had elementary industrial education become interested in their occupations, and instead of feeling their calling is not respected, seek the highest training in it. Repeatedly some of the Brazilian young men in the school shops have expressed the wish that the United States would follow the example of France and circulate catalogues of institutions of learning printed in the language of the South Americans so they might read and understand them. These young men were endeavoring to discover what the schools of other nations offer in industrial education.

One of these young men showed such talent that he was sent abroad to finish his training. Though of humble birth he is gifted, and it was through industrial education that he was discovered. If this education were given to all children in the elementary school, many more just as unusual individuals would be developed from obscure places. There is a need for something which will prevent a waste of human resources of society in its gifted men born in lowly life, who are unable to improve their natural powers because of lack of opportunity. Such a need is met by industrial education.

An important question which confronts the elementary school is how to provide training equally good for all its pupils. The period of childhood between the years of 6 and 14 should be reserved for general education which tends toward efficient functioning in any life activity. But persons differ in aptitudes and capacities and because of these differences they will later enter various vocations which naturally result in their being in distinct groups. There are those who wish to prepare for the liberal school, others for commercial or professional work, and some for the trades. There are always those who feel the weight of economic conditions and must take their places and fight their way at an early age, and for these the school should feel a great concern.

The elementary school should not be exclusive in any sense. It must be no less concerned about industrial than about general education. To all children should be given an equal chance and the school must not lead boys who might become excellent cabinetmakers into being unsuccessful dentists, nor girls who might be first-class dressmakers into being inefficient school teachers. The South American Republics should make it worth while for all children to remain in school. They should provide for the children of the wage earner something of an equivalent of what they are offering to the children of the well-to-do and professional classes. To accomplish this end industrial education should be included as a part of the curriculum of the elementary public school.

INDUSTRIAL EDUCATION IN THE SECONDARY SCHOOLS OF LATIN AMERICA.

While industrial education has not been provided as a part of the elementary instruction, it has received much attention in the secondary school of these Republics. The secondary school of Latin America does not well correspond to the public high school of the United States, although it offers training which is directly subsequent

to that of the elementary school. The industrial secondary school is having remarkable success. It is of high rank and enjoys public favor. It is supported by the Federal Government and is under the control of a system separate from the elementary school. It is an excellent institution, doing a work far superior to that which is possible for any school supported by the local government of the average city, which apparently experiences difficulty in providing a good elementary school.

The aim of these industrial schools is to produce good citizens as well as good mechanics. Courses for both general and practical instruction are offered. The training is specialized from the very beginning, and when a pupil enters he is immediately assigned to the acquisition of a certain trade.

Almost everywhere in South America the industrial schools are housed in large, well-arranged buildings, which are thoroughly equipped with the necessary tools and machinery. They are fine tributes to the spirit of industrialism.

Not all the time and money are spent in preparing boys for the practical things of life. Schools for young women hold an important place in industrial education in the South. At the present time five such institutions are flourishing within the city of Buenos Aires alone.

NEED OF CONTINUATION SCHOOLS AND COOPERATION WITH THE INDUSTRIES.

These Republics deserve much credit for the adequate provision made for pupils who are able to enter the secondary institutions, but something should be done for the youth who must begin earning a livelihood at an early age. The industrial school should be supplemented by another type of school which has for its problem the further education of the young wage earner. Much of this training, on the technical side, must fall to the vocations themselves, but a school can supplement shopwork by supplying the theoretical and general instruction made necessary by modern business and industrial life.

Continuation classes for this purpose should be organized and attendance of 6 or 8 hours per week made compulsory for all individuals between the ages of 14 and 16 years who are not in any school.

These classes should be in session during the day. Young workers who have to concentrate their attention on a machine or process for 8 or 10 hours have but little energy left for serious thought at night. Hence, their education should be given as a part of their work. This plan has an additional merit in that the apprentices are self-supporting while learning a trade and receiving an education. If they are required to devote all their time to the trades or have no opportunity for instruction through the continuation school, their intellectual and civic training are in most cases neglected. By making night school a part of the regular system the school should also aid those who are not required to attend either day or continuation classes, but who desire to know more about their work.

Moreover, there should be cooperation between school and industry. The most valuable industrial education is the result of the concurrence of opinions of educators and practical men. This may be effected by the maintenance of a local board of control composed of equal number of educators and representatives of the industries. Without the former the time and strength of the pupils will be wasted by ill-considered methods of instruction which are likely to be dominated too completely by the vocational aim, and without the latter the school can not keep in touch with the actual industrial life.

Furthermore, the schools should cooperate with the people by assisting parents in aiding their children to select the work for which each is best fitted. This may be done by maintaining an advisory board composed of representatives of the industries who understand what is desirable in a pupil to make him successful in a certain trade, and by providing free information through printed matter stating the wages paid, possibilities for advancement offered, risks to be encountered, and the preparation required for the various occupations.

EVIDENCE OF PRACTICABILITY.

Latin America need not look beyond her own borders for evidence of the practicability of such a comprehensive system. A progressive school in Brazil is demonstrating many of the possibilities of this plan and is doing more than the average industrial school to meet the needs of the people.

Early in the history of this institution (which is primarily an engineering school) the founders recognized the great need of industrial training for boys who never can enter the professions. Consequently shops were established and instruction in agriculture and the trades was offered.

Although really a secondary institution, it was compelled to organize an elementary department and give the industrial education which had been neglected by the city elementary school and which was necessary to prepare the pupils to receive the secondary instruction. As the school's purpose is to produce men trained for citizenship as well as for the industries general education is continued throughout the entire course.

Time, much of which is wasted in the majority of schools, is an important factor in the success of this institution. Classes are in session 7 hours a day, 5½ days a week. One-half of the time is given to academic studies and one-half to practical work.

Each pupil in the elementary department must pursue all courses both general and practical until the beginning of the last half of the final year. At this period he receives special instruction in the work he has selected as best suited to his ability, but if he decide his choice was not well made, he is given the opportunity of preparing for another trade when he enters the secondary school.

Beginning in the first year of the secondary course students are paid for their time as soon as they are able to produce articles of commercial value. They are urged to remain in the shops during vacations. The object is to encourage them to continue the course they have begun, to improve their time, and to keep alive an interest in the work.

This department offers a five-year course for specialization in the important trades. The first four years are spent in mastering the principles and processes. During the fifth year the student is engaged in the regular commercial shops connected with the institution as a paid workman under supervision of the school. By this method the boy is watched over and guided during that critical period through which each must pass when first he is thrown upon his own resources.

Graduates of this industrial school are holding responsible positions. One is superintendent of a large machine shop, another is foreman in a garage, and another is the instructor of mechanics in a school of agriculture. Many others have entered the industries of the community.

The success of these young men is largely due to a thorough comprehensive education which has directed their attention to the industrial vocations for which they are suited and has trained them to be skilled workmen and good citizens. These proficient men are the product of an institution the founders of which recognized the importance of industrial education in the elementary school, followed by industrial training which is made thoroughly practical through cooperation with the industries, the parents, and the students.

This school, like most other secondary institutions of Latin America, is, and should continue to be, maintained by the Government. With such support it has been able to offer many advantages, but these Republics may render still greater service by including industrial education as a function of the elementary public school; by vigorously enforcing the compulsory laws, thus requiring the children who most need industrial education to receive it as a part of their regular training; by providing further opportunities through continuation and night schools for those who are engaged

in earning a livelihood; and by making the instruction thorough and practical through a special study of and cooperation with the industries.

Such a system of industrial schools will provide educational opportunities for both the genius and the ordinary man born in lowly life. It will increase the efficiency of the school, quicken the industries, and hasten the industrial independence of these nations.

The American Republics always should maintain the ideal of a liberal education, but they must not underestimate the value of industrial education, which is the basis of national strength and true culture.

INSTRUCCIÓN COMERCIAL.

Por SANTIAGO H. FITZ-SIMON,
Buenos Aires, Argentina.

Indudablemente, la República Argentina ocupa hoy un alto rango entre las naciones latinoamericanas, en todo lo que se refiere a la educación del pueblo. Cuando uno estudia detenidamente las causas del notable progreso educacional realizado por la República, durante los últimos 45 años, reconocerá que el ejemplo y la enseñanza de los norteamericanos han ejercido una influencia altamente benéfica para nuestra instrucción primaria y normal. Cuando Sarmiento regresó de los Estados Unidos para ocupar la Presidencia de la República, en 1869, una de sus primeras medidas fué la fundación de la Escuela Normal del Paraná. El Presidente—maestro de escuela—como solíamos llamarle, puso su escuela modelo bajo la dirección de un distinguido profesor norteamericano, y el instituto, en poco tiempo, adquirió la alta reputación que hasta hoy mantiene; con el andar del tiempo, salieron de sus aulas muchos jóvenes argentinos bien preparados para la dirección de las escuelas comunes, como también para el desempeño de cátedras en nuestros institutos de enseñanza secundaria. Así, el gran educacionista que trajo de Cambridge, Mass., al astrónomo Gould para explorar los cielos del Sud, introdujo los sistemas y métodos de enseñanza norteamericanos que, debido al cuidado de nuestro Gobierno, se arraigaron en la República. Las numerosas profesoras americanas que vinieron al país durante las administraciones de Sarmiento y Avellaneda, fueron enviadas a la Escuela del Paraná, en donde se aclimataron y aprendieron el español; de allí salieron para dirigir las escuelas normales establecidas ya en nuestras 14 Provincias. En las varias conferencias dadas en Nueva York, Boston, Filadelfia, Washington, Chicago y Madison (diciembre, enero, febrero y marzo de 1903), traté de hacer justicia a los nobles esfuerzos de esas eximias docentes, a cuyo ejemplo y enseñanza debe tanto la Argentina.

A pesar de lo mucho hecho por levantar el nivel intelectual de las poblaciones, durante la época mencionada, antes del año 1890 no existía un solo instituto nacional donde pudiesen adquirir los conocimientos más indispensables para las carreras comerciales y administrativas, los jóvenes que a éstas quisieran dedicarse.

Alberdi, uno de nuestros más grandes estadistas, decía en 1852, que el plan de educación nacional debiera multiplicar las escuelas de comercio, fundándolas en pueblos mercantiles; durante largos años, la opinión pública se expresaba al respecto en términos nada equívocos; en todas partes se repetía que el país necesitaba muchas escuelas comerciales, en lugar de tantos colegios, donde sólo se estudiaba para el doctorado.

Fué el Doctor Víctor M. Molina, el primer legislador que en el Parlamento Argentino levantara su voz en favor de la enseñanza comercial, y en una de las sesiones del año 1889, presentó un proyecto, por el cual se autorizaba al Poder Ejecutivo a crear dos escue-

las de comercio: una en la Capital de la República y otra en la ciudad del Rosario de Santa Fe. Este proyecto envolvía una idea nueva, que tendía a abrir otros rumbos a la juventud estudivosa, a ensanchar el círculo estrecho a que estaba limitada la enseñanza general, que sólo daba por resultado el desarrollo exagerado de las carreras liberales—carreras muy nobles, por cierto, pero no las únicas necesarias para el desenvolvimiento de las fuerzas vivas del país.

El año siguiente, siendo Presidente interino de la República el Doctor Carlos Pellegrini, y Ministro de Instrucción Pública el Doctor Filemón Posse, fué fundada por superior decreto, la primera Escuela Nacional de Comercio. El mismo decreto estableció el plan de estudios, las condiciones de ingreso y la distribución de las materias en un curso de cuatro años. A pesar de algunas deficiencias, ese plan reunía muchas buenas condiciones; en el concepto de sus autores, la enseñanza comercial no era, como muchos creían, una mera preparación para dependientes de tienda o almacén, sino más bien una enseñanza científica, a la vez general y especial, dirigida a los estudios positivos que convienen a los jóvenes que quieren desempeñar un papel importante en las carreras comerciales, industriales y administrativas. Gran impulso se dió a la nueva enseñanza durante los ministerios de los Doctores Balestra, Bermejo, Fernández, González y Naón; se amplió el plan de estudios y se fundaron dos escuelas más, una para varones y otra para mujeres, en la Capital, y otras en las ciudades del Rosario, La Plata, Bahía Blanca, Concordia y Tucumán.

ORGANIZACIÓN DE NUESTRA ENSEÑANZA COMERCIAL.

Poco antes de su salida del Ministerio, en 1910, el Doctor Naón introdujo importantes modificaciones en la organización de las escuelas de comercio. Esto lo hizo con el propósito de graduar mejor los estudios, y de proporcionar una sólida preparación a aquellos que quisieran dedicarse a los altos estudios comerciales.

Según este plan, la enseñanza comercial está organizada en tres grados: Elemental, superior y universitaria.

En la Escuela Elemental (cursos nocturnos) se forman buenos empleados de comercio y tenedores de libros; en la superior, los estudiantes son sometidos a una disciplina intelectual de una naturaleza y grado calculados para estampar en su carácter esas cualidades que les llevarán al éxito en sus ocupaciones ulteriores; en la Facultad de Ciencias Económicas, se educan los futuros jefes de los grandes establecimientos comerciales, bancarios e industriales, los altos funcionarios administrativos, los contadores públicos, los profesores de ciencias comerciales, los hombres de iniciativa, capaces, por los conocimientos adquiridos y por el desenvolvimiento de su inteligencia, de administrar capitales en cualesquiera de las divisiones de la labor productiva.

En la Escuela Elemental (cursos nocturnos) la enseñanza se da en tres años, para los que aspiren al diploma de dependiente idóneo de comercio, y en cuatro años para aquellos que deseen obtener el diploma de tenedor de libros. Las materias son las siguientes: Obligatorios—Aritmética, práctica de escritorio y contabilidad, castellano y correspondencia comercial, historia argentina, geografía general y comercial, escritura y caligrafía, escritura mecánica. Electivos—Inglés o francés, productos mercantiles, estenografía.

La enseñanza superior para aquellos que aspiren al diploma de perito mercantil, se da en cinco años, y abarca las siguientes materias:

Duración del curso.

Materias:	Años.
Aritmética, álgebra, geometría.....	5
Dibujo.....	2
Castellano:	
Gramática, composición, literatura y correspondencia comercial.....	5
Práctica de escritorio y contabilidad.....	4

Historia natural, física y química y ciencias naturales.....	4
Tecnología mercantil.....	2
Geografía general y comercial.....	4
Elementos de economía política.....	1
Historia argentina, americana, y del comercio.....	4
Tramitación aduanera.....	1
Elementos de derecho comercial.....	1
Inglés.....	5
Francés.....	4
Escritura y caligrafía.....	2
Estenografía y escritura mecánica.....	2

Gimnasia y juegos atléticos para los alumnos de los tres primeros años. Para los de cuarto y quinto años: Tiro al blanco y gimnasia militar.

Los cursos y exámenes para contadores, calígrafos y traductores públicos que, con muy buen resultado, funcionaban en la Escuela Superior de Comercio de la Capital, actualmente dependen de la Facultad de Ciencias Económicas. Cursos análogos se dan en la Escuela Superior del Rosario.

CONDICIONES DE INGRESO EN LOS DIFERENTES CURSOS.

Escuela elemental (cursos nocturnos).—Para ingresar, se requieren las siguientes condiciones: (a) Haber cumplido 14 años; (b) certificado de haber cursado los cuatro primeros grados en las escuelas comunes, o en su defecto, rendir examen de las materias contenidas en el plan de estudios de dichas escuelas.

Escuela superior.—(a) Haber cumplido trece años; (b) haber cursado los seis grados de las escuelas comunes, o en su defecto, rendir examen de las materias contenidas en el plan de estudios de quinto y sexto grados de dichas escuelas.

De la lectura del plan de estudios para las escuelas superiores, se desprende que la idea de nuestro Gobierno es no sólo impartir una sólida preparación comercial, sino a la vez, una cultura general a los jóvenes que frecuentan las aulas; y para hacer ver cómo tratamos de realizar esa idea, creo conveniente transcribir los programas vigentes para la enseñanza de algunas de las materias.

CASTELLANO.

Primero y segundo cursos.—Lectura comentada de trozos selectos; composiciones sobre cosas o hechos de conocimiento del alumno por observación propia; composiciones sobre temas tratados en clase, deduciendo de los mismos ejercicios las principales reglas de sintaxis y ortografía.

Tercero, cuarto y quinto cursos.—Gramática castellana; lectura; elocución; composición; conversaciones y debates entre los alumnos, sobre temas fijados con anticipación, bajo la dirección del profesor; nociones de etimología; estudio del vocabulario industria y comercial; correspondencia comercial; nociones de literatura.

El estudio a que debe asignarse un lugar importante en el curso del comercio, es el del idioma del país; es decir: el arte de expresarse bien, tanto en la conversación como por escrito, y ante el público. Los trabajos de composición deben empezar, desde muy temprano, para acostumar al joven a ordenar sus ideas, lógicamente, y expresarlas con la mayor concisión y claridad posible. La adquisición del estilo literario puede dejarse para más adelante, para los últimos años de estudio; pero en todo instituto nacional de comercio debe enseñarse la literatura, porque tanto derecho tiene el joven que piensa dedicarse a los negocios de adquirir un conocimiento serio de la literatura de su raza, como el que va a seguir una carrera universitaria.

La educación de un hombre de negocios no es completa, si no se halla en condiciones de presentarse ante sus semejantes en público para expresar sus opiniones.

HISTORIA ARGENTINA Y AMERICANA.

Primer curso.—Estudio del período colonial en toda la América, ateniéndose en particular sobre exploraciones, colonización, productos de cada región, explotaciones vegetales, animales y minerales; monopolio comercial.

Segundo curso.—Período de la Independencia Argentina y Americana; acontecimientos más importantes, sus causas y consecuencias políticas, sociales y económicas

HISTORIA DEL COMERCIO.

Primer curso.—Consecuencias económicas del descubrimiento de América; resultados del descubrimiento del Río de la Plata y sus afluentes; aspecto económico de la conquista; el adelantazgo; las encomiendas; el imperio jesuítico; el sistema económico, español, su explicación y consecuencias. Virreinato del Río de la Plata; razones políticas y económicas de su creación; inmigración, industria y comercio; el consulado; su origen, trabajos e influencia; la Revolución; sus principios y prácticas económicas; la industria y el comercio en el período de la independencia; durante la tiranía; en la época de la Confederación y Estado de Buenos Aires; ganadería, agricultura, comercio exterior e interior; inmigración; población; rentas y presupuesto de la Nación desde 1862 hasta nuestros días.

Segundo curso.—I. Estudio de los principales caracteres y extensión geográfica del comercio de Fenicia, Grecia, Etruria, Cartago y Roma.

II. Comercio de los árabes; las Cruzadas; sus principales resultados económicos; las Repúblicas italianas; la Liga Anseática.

III. Problema económico que plantea la caída de Constantinopla en poder de los turcos; descubrimientos de tierras y rutas desconocidas; sistemas coloniales de los principales países colonizadores de esta época: España, Portugal, Inglaterra, Holanda y Francia; Inglaterra bajo Cromwell; Francia bajo Luis XIV.

IV. Consecuencias económicas y comerciales de la Revolución Francesa; preponderancia de Inglaterra; el Zollverein; Peel y Cobden en Inglaterra.

V. Los tratados de comercio; protección y libre cambio; cláusulas de la Nación más favorecida; la República Argentina y sus tratados; grandes vías de comunicación, terrestres y marítimas.

VI. Bosquejo histórico-financiero de los Estados Unidos desde la guerra de secesión; proteccionismo e imperialismo; nuevas teorías económicas en Inglaterra; el imperio alemán desde 1870; el "Commonwealth" Australiano; dominios del Canadá, de Nueva Zelandia y de Sud África; Congreso Americano y Panamericanismo; actitud de la República Argentina.

GEOGRAFÍA.

En los dos primeros cursos de la enseñanza de esta materia, se da la debida importancia a los ejercicios prácticos que hacen los alumnos, bajo la dirección de sus profesores. Estos ejercicios consisten en: (a) Practicar medidas; uso de la cinta métrica y cadena; uso de la escala; trazar por escala un plano de la clase, del patio y de la parte de la planta baja de la escuela; (b) plano de los contornos de la escuela; plano de la plaza más cercana, localización de las calles, indicando algunos edificios importantes; uso de los caracteres convencionales que se emplean en la construcción de mapas; uso de la brújula; (c) estudio del mapa de la Provincia de Buenos Aires; hacer mapas de algunos de los partidos (diversas escalas); (d) ejercicios prácticos sobre el globo terráqueo; uso del globo, pizarra, latitud, longitud, diferencia de tiempo entre dos lugares, etc.; (e) clima, temperatura, termómetro máximo y mínimo; observaciones hechas por los alumnos; diagramas de las variaciones del termómetro durante cierto tiempo; termómetro mojado; (f) presión del aire; uso del barómetro Fortín y del Aneroide; diagramas demostrativos de las oscilaciones del barómetro durante cierto tiempo; comparar el promedio anual de la altura del barómetro de varias de las regiones andinas, con el barómetro de Buenos Aires; lo que se deduce

de estas comparaciones; (g) estudio de la carta del tiempo de la Oficina Meteorológica Nacional; líneas isotérmicas e isobáricas en la República; (h) uso del pluviómetro, registro mensual de la cantidad de lluvia caída, llevado por dos alumnos de cada división, cuadros gráficos; comparación entre la lluvia caída en varias Provincias durante seis meses del año, y la de Buenos Aires, durante el mismo tiempo, cuadros gráficos; dirección y fuerza del viento, veleta y anemómetro, cuadros gráficos.

En los tres cursos siguientes, los alumnos hacen un estudio detenido de la geografía física, política y económica de la República y de los países con quienes tenemos relaciones comerciales. La enseñanza se da de acuerdo con las instrucciones siguientes:

I. La geografía económica es un ramo científico: en su enseñanza, el profesor no deberá recargar la memoria de sus discípulos a expensas de sus facultades mentales superiores.

II. El profesor debe proceder de modo que el alumno llegue a obtener los conocimientos por sí mismo por las fuentes dentro de su alcance, pues el objeto exclusivo en su enseñanza no debe ser el de impartir conocimientos o informes geográficos al alumno.

III. En los primeros pasos del estudio de esta materia, el profesor ayudará al discípulo a buscar los datos, informes y noticias exigidas por el programa y por la serie de temas propuestos. Al mismo tiempo, le enseñará el mejor modo de ordenar, clasificar o comparar todos los hechos o datos más importantes que se relacionan con el tema dado.

Será, por lo tanto, muy conveniente adoptar el método "heurístico."

IV. Pueden emplearse tres métodos distintos en esta enseñanza. Con cualquiera de ellos, bien empleado, se consigue buen resultado: 1º, por países, dándose preferencia al estudio de aquellos con quienes se mantienen mayores relaciones comerciales; 2º, por las zonas naturales marcadas por la geografía y el clima; 3º, por materias primas y manufacturas.

V. El estudio debe hacerse sobre informes recientes y fidedignos.

En todos los cursos deberán hacerse ejercicios de cartografía y ejercicios sobre los mapas de las regiones que se estudien; y antes de emprender el estudio de la geografía económica de un país o de un grupo de países, el alumno deberá tener un buen conocimiento de su-geografía física y política.

Deberán tratarse de preferencia los siguientes temas: Situación topográfica, constitución del suelo, reino animal, vegetal y mineral.

Estado político y social: Riqueza nacional, prosperidad o decadencia.

Principales producciones que cada país recibe del extranjero: Producciones que nuestra República puede proporcionar a cada uno y las que más tarde podrá proporcionar. Principales plazas de comercio; su importancia, viabilidad, vías terrestres, fluviales, marítimas, telegráficas, etc.

CONTABILIDAD Y PRÁCTICA DE ESCRITORIO.

Los alumnos que asistan a los tres cursos del Escritorio Modelo o "Commercial Bureau," bajo la dirección del regente y los profesores respectivos, efectúan toda clase de imaginarias operaciones mercantiles. Siguiendo un sistema bien graduado, consiguen conocimientos prácticos de los principios del comercio, como de los métodos empleados en los negocios, y al terminar los cursos completos, el estudiante aplicado está familiarizado con las operaciones ordinarias de una casa comercial.

En el primer año del curso, se enseñan: Uso del libro copiador, expedición de correspondencia, uso de las tarifas postales y telegráficas, códigos telegráficos; redacción de papeletas de conducción, cuentas y facturas de venta corriente, recibos, guías, conocimientos, vales, pagarés, giros, letras de cambio, letras de plaza, cheques simples y cruzados, certificados de depósito. En el mismo curso, se ejercita mucho a los

alumnos con cálculos de intereses por varios sistemas, reducción de oro a papel y vice versa, tara, merma, descuentos, comisiones.

Teneduría de libros: Se lleva una contabilidad completa y sencilla, practicando los correspondientes balances de comprobación y saldos, e incluyendo el balance general y cierre de libros. La teneduría de libros debe enseñarse individualmente; así aconseja la experiencia. En las clases, el profesor puede dar ejercicios colectivos y conferencias; pero cada alumno debe seguir el curso independiente de sus compañeros, salvo aquellos casos en que el profesor considere necesario explicar a toda su clase los principios generales que son la base de la materia que enseña.

Según este modo de proceder (1) el alumno inteligente no se detiene en sus progresos a causa de los compañeros más lerdos, sino que sigue adelante con la rapidez que quiera, con tal que haga bien su trabajo; (2) el estudiante moroso no se ve obligado a apurarse más de lo que sus facultades le permiten; no se siente empujado por aquellos que son más rápidos que él en el trabajo, sino que se le da tiempo para que vaya dominando las dificultades que se le presenten; no se siente inclinado a copiar del vecino, porque en el trabajo de éste no hallaría ninguna ayuda. Por este medio, los lentos aprenden, de paso, el valor de la ayuda propia, lo que por sí solo constituye una gran lección; bien aplicado este sistema, ningún estudiante puede estar ocioso, y como la teneduría de libros es una de las materias principales del curso, conviene que se haga objeto de la instrucción especial del individuo.

En el segundo curso, los alumnos se ejercitan en los siguientes trabajos:

Facturas para el exterior: De compra, de consignación y de venta con diferentes bonificaciones o sin ellas.

Operaciones de aduana: Diversas clases de documentos que intervienen en estas operaciones; liquidación de derechos; procedimiento para tonelaje y arqueado de buques; medición de toneles y pipas; cubicación de maderas.

Cálculos: Cuentas corrientes, diversos sistemas para liquidar los intereses; reducción de moneda argentina a monedas extranjeras y vice versa; prorrato de facturas.

Teneduría de libros: Planteamiento y operaciones sucesivas de la contabilidad de un almacén por mayor que explota el comercio de importación y exportación, consignación de frutos del país y negocios en participación; practicando todas las operaciones concernientes, hasta el cierre y reapertura de los libros.

En el tercer curso la enseñanza versa sobre cambios: su mecanismo, arbitrajes, nivelación de cambios; cálculos y estudios de estas operaciones y de los documentos que origina: fletamentos, póliza de fletamento, averías, póliza de seguros; práctica bancaria; notas de descuento; facturas de negociación; tasa del interés y razones de su variación; operaciones realizadas con intervención de los Bancos; giros y cartas de crédito; letras documentadas; transferencias telegráficas; bolsa de comercio; operaciones usuales; fondos públicos, acciones, obligaciones; cédulas hipotecarias.

Contabilidad: ejercicios con asientos que comprendan las operaciones siguientes: Operaciones a oro; compra y venta de oro, al contado y a plazo; operaciones de conversión; compra y venta de cambio; recibo y remesa de los mismos; liquidación de balances, con saldo a oro y papel; nociones sobre la contabilidad de establecimientos agrícolas, ganaderos, fabriles, bancos, empresas de transportes y compañías de seguros; nociones sobre contabilidades administrativas; en el escritorio modelo, los alumnos llevan diversas contabilidades mercantiles, relacionadas entre sí, como consecuencia de operaciones practicadas entre los mismos.

TECNOLOGÍA MERCANTIL—ESTUDIO DE LAS MATERIAS Y PRODUCTOS QUE SON MOTIVO DE COMERCIO.

Reino mineral, primer curso.—Principales minerales: Su origen, lugares de producción, procedimientos de extracción y beneficios, propiedades, usos, importancia industrial, procesos para el aprovechamiento en la industria y en la manufactura, precios, datos estadísticos sobre producción, importación y exportación.

Reino animal.—(a) Animales agrestes: la caza, la pesca; (b) animales domésticos: ganadería en general; (c) procedimientos de conservación de los productos animales: stock ganadero, razas, consumo local, formas de exportación, transformación industrial, comercio, precios, datos estadísticos sobre producción, exportación e importación.

Reino vegetal, segundo curso.—(a) Materias vegetales usadas tal como se encuentran en la naturaleza, transformadas o mezcladas con materias minerales o animales; (b) propiedades de las maderas empleadas en la construcción de los edificios, muebles y objetos varios; (c) sustancias alimenticias usadas tal como se encuentran en la naturaleza, usadas después de ser transformadas por medios industriales; (d) plantas medicinales; (e) textiles; (f) oleaginosas; (g) curtientes; (h) tintóreas; (i) aromáticas.

Procedimientos de explotación de los vegetales silvestres, usos, cultivo, aprovechamiento industrial, comercio, precios; datos estadísticos sobre exportación e importación.

VISITAS A ESTABLECIMIENTOS INDUSTRIALES.

Los estudiantes del curso para peritos mercantiles, cuarto y quinto años, bajo la dirección del profesor de tecnología, visitan una vez por quincena algunos de los más importantes establecimientos industriales de la capital, o de alguno de los pueblos más cercanos. Durante estas visitas, los alumnos atienden a las explicaciones dadas por los jefes de los talleres y por el profesor sobre la materia prima y maquinaria empleadas, elaboración de la materia, su embalaje, y anotan en sus cuadernos las observaciones del caso. Al fin de cada mes, los alumnos presentan al profesor un informe detallado sobre los siguientes temas: (a) Descripción general de los establecimientos visitados; (b) materias primas empleadas, su procedencia y elaboración; (c) cifras relativas a la producción, consumo, importación de las materias primas, y a los productos manufacturados.

Idiomas extranjeros, inglés-francés, Primer curso.—Ejercicios orales y escritos para la adquisición del vocabulario; descripciones de objetos, deduciendo de las mismas las principales reglas gramaticales; Conjugación de verbos; ejercicios sencillos de conversación; Lectura y traducción de trozos fáciles y graduados al castellano y vice versa.

Segundo curso.—Ejercicios de conversación y composición en el idioma extranjero: Recitación de trozos cortos en prosa y verso; lectura y traducción de índole comercial e industrial del idioma extranjero al castellano y vice versa; ampliación del estudio gramatical por medio de ejercicios prácticos.

Tercer curso.—Ejercicios de conversación y composición en el idioma extranjero; lectura y traducción al castellano y vice versa; recitación de trozos selectos; ampliación del estudio gramatical; correspondencia comercial en idioma extranjero.

Cuarto y quinto cursos.—Ejercicios de conversación y composición en el idioma extranjero; lectura, traducción y análisis del idioma extranjero al castellano o vice versa, de trozos escogidos de los autores modernos. Se da preferencia a las obras que se relacionan con las asignaturas que estudian los alumnos.

Correspondencia comercial.—En todos los cursos, los profesores utilizan cuanto pueden el idioma extranjero y se abstienen de hablar en castellano, salvo casos en que es indispensable dar a sus explicaciones mayor brevedad, claridad y comprensión.

MUSEO DE PRODUCTOS.

El Museo de Productos está instalado en un amplio local. Contiene vitrinas, armarios, estantería y mesas donde, en sus secciones respectivas, se exhiben las valiosas colecciones de productos naturales y elaborados de la República y del extranjero, donadas a la escuela por varios comerciantes y fabricantes de esta ciudad, de las Provincias, de otros países americanos y de Europa.

En una sección del museo, el estudiante tiene a su disposición una colección bien clasificada de catálogos, álbumes, precios corrientes de las principales plazas comerciales del mundo; en otra sección, hay un sitio para colecciones de pesos y medidas,

envases, monedas, cuadros-murales gráficos y estadísticas comparativas entre las principales naciones, sobre movimiento postal y telegráfico, ferrocarriles y vapores, importación y exportación, capitales en giro, extensión de los cultivos y producción agrícola.

GABINETE DE GEOGRAFÍA.

Para la enseñanza de la geografía práctica, materia que los alumnos estudian en el primer año del curso, los profesores tienen en el gabinete los útiles y aparatos más esenciales para la medida de distancias y levantamiento de pequeños planos, es decir, escalas, cadenas, jalones, brújulas, planchetas y grafómetros. Existen, además, globos terráqueos de diversos tamaños, una gran colección de mapas e ilustraciones y más de 4,000 diapositivas para la enseñanza por medio de proyecciones luminosas. Es de advertir, que en la escuela, la linterna óptica no sólo se usa para ilustrar las lecciones de geografía e historia, sino también para la demostración de teoremas matemáticos, y en la enseñanza de idiomas, cuando los profesores creen necesario recurrir a este admirable método de instrucción.

Para las observaciones meteorológicas que, de acuerdo con el programa de geografía, se practican con la exactitud posible, los alumnos disponen de todos los elementos requeridos. En el gabinete se exhiben los mejores trabajos cartográficos, planos y cuadros estadísticos hechos por los estudiantes, como también los diagramas demostrativos de las variaciones de la temperatura y de la presión del aire presentadas por éstos semanalmente.

LA ENSEÑANZA PARTICULAR.

En la República existen varios institutos mercantiles, fundados por particulares, que admiten alumnos de toda edad, a partir de la de 12 años, en cualquier época del curso escolar. Con algunas excepciones, éstos se mantienen independientes, sin vincularse con los establecimientos nacionales. Las escuelas internacionales, cuya casa matriz se halla en Pensilvania, forman un establecimiento que goza de alta reputación en esta ciudad. Como las otras escuelas fundadas por la sociedad en Nueva York y en Londres, el sistema adoptado es la enseñanza por correspondencia. En el curso completo que funciona en el instituto, tiene mucha importancia la enseñanza de las siguientes materias comerciales: Aritmética mercantil, castellano, correspondencia mercantil, taquigrafía, escritura, contabilidad, escritura mecánica, inglés, francés.

En la enseñanza de los idiomas francés e inglés, se adopta el método del fonógrafo, combinado con el de la instrucción por correo. El sistema ha sido favorablemente acogido, como demuestra el crecido número de alumnos que se matriculan todos los meses, en el curso especial de idiomas. Aunque hace relativamente poco tiempo que funciona este instituto, genuinamente norteamericano, se puede asegurar que él ha contribuido mucho ya a la enseñanza comercial en nuestro país.

El director general de estas escuelas para la América del Sud es el señor R. T. Brooks, distinguido ciudadano de los Estados Unidos de Norte América; y el director educacionista de las mismas el señor I. Grinfeld, antiguo y distinguido estudiante de la Escuela Superior de Comercio de esta Capital; este señor, en mérito de su inteligencia y de sus estudios, obtuvo una beca del Gobierno argentino, y así pudo continuar sus estudios superiores en las universidades de Nueva York y Columbia. Según informes que he recibido del Doctor Johnson, decano de la Facultad de Comercio de Nueva York, el señor Grinfeld ha sido uno de los primeros estudiantes de su curso.

LA UNIVERSIDAD Y EL COMERCIO.

Es digno de mención especial el significativo movimiento de la opinión universitaria, en favor del establecimiento de facultades de comercio o cursos superiores de ciencias económicas, en muchos países extranjeros. En estos últimos años, según he podido ver en Norte América, Inglaterra, Francia, Bélgica y Alemania, se acentúa el

principio de que la carrera comercial reclama una preparación tan seria como las demás, y que no debe quedar fuera del docto recinto de la vida universitaria.

En Estados Unidos y Canadá, en algunas universidades que he visitado, se preocupan del problema de la enseñanza comercial superior, con la animación y energía que tan honrosamente distingue a la educación americana en nuestra época.

Hace dos años se fundó por ley en esta Capital, la Facultad de Ciencias Económicas, cuyo instituto funciona ya con bastante regularidad. Nuestros estadistas creen en la necesidad de proveer, para las personas que quieran dedicarse a los altos estudios comerciales, una instrucción especial en la ciencia y arte de las finanzas y economía política, para que, estando bien informados y libres de ideas erróneas sobre tan importantes materias, puedan éstos servir fielmente a la comunidad, en el congreso, en la prensa o en la vida comercial, contribuyendo así al mantenimiento de una sana moral financiera en nuestro país.

Según la experiencia me enseña, los jóvenes preparados en nuestras escuelas superiores, o en nuestra Facultad de Ciencias Comerciales, se hallan en condiciones de desempeñarse con eficiencia en el comercio y la banca, en cualquier país en donde se habla o castellano, o inglés o francés.

En lo que se refiere a la proyectada adopción de "un curso uniforme de instrucción comercial, para todos los países americanos," en este continente, fuera de la Argentina, sólo conozco a los Estados Unidos y al Dominio en de Canadá, donde, en mi calidad de comisionado argentino, visité muchos institutos de enseñanza comercial, desde las escuelas elementales hasta las facultades de ciencias económicas. A mi modo de ver, convendría que en los cursos mercantiles de Norte América se fundaran clases especiales para la enseñanza de los idiomas castellano y portugués, como también que sus alumnos dedicaran parte de su tiempo al estudio de los productos naturales de los países latino-americanos, su geografía y su historia.

¿CÓMO PUEDE UNA NACIÓN PREPARAR DE LA MANERA MÁS EFECTIVA A SUS JÓVENES PARA UNA CARRERA COMERCIAL QUE DEBA EMPRENDERSE BIEN SEA EN DICHA NACIÓN O EN UN PAÍS EXTRANJERO?

Por ANTONIO L. VALVERDE,

Profesor Titular de la Escuela de Comercio de la Habana, Cuba.

La legislación que rige en Cuba y que reglamenta los estudios de comercio, es la Orden No. 470 de 15 de noviembre de 1900 que establece la forma en que ha de hacerse esa clase de estudios.

Según esa orden, la carrera comercial debe cursarse en la Escuela de Comercio, anexa al Instituto de Segunda Enseñanza de la Habana, y que es la única que existe en la República, aprobándose las siguientes asignaturas: Aritmética y álgebra, geografía universal, cálculos mercantiles, teneduría de libros y contabilidad aplicada al comercio, empresas y oficinas públicas, práctica del comercio, geografía industrial y comercial, economía política y nociones de hacienda pública, estadística, legislación mercantil, derecho internacional mercantil, historia del comercio, historia y reconocimiento de los productos comerciales, idioma inglés, idioma francés.

Con el estudio y aprobación, mediante exámenes de esas materias, se obtiene el título de profesor mercantil. La práctica hasta ahora seguida es la de agrupar las materias de manera que se empleen cuatro años en obtenerse ese título; pero esta distribución no está sancionada por la ley; porque ésta exige únicamente, que el estudio debe hacerse cuidando que la aritmética y álgebra preceda a los cálculos mercantiles y teneduría de libros, y estos a la práctica del comercio; la geografía universal y estadística a la geografía industrial y comercial, y la legislación mercantil

al derecho mercantil internacional. Observando estas precedencias, la carrera de profesor mercantil puede cursarse en tres años legalmente.

Poca utilidad presta ese título académico en Cuba. No porque creamos que la organización de la Escuela sea deficiente; sino porque desde tiempo inmemorial, se le ha prestado poca o ninguna atención.

En Cuba, país eminentemente comercial y agrícola, se nota que la inmensa mayoría de sus hijos, dedican sus aficiones a las carreras de abogados y médicos, en primer lugar, abandonando toda otra dirección por estimarla poco productiva. Desde que ocurrió en Cuba el cambio político y se constituyó en nación independiente, se ha iniciado una favorable reacción en favor del comercio, pero no de los estudios comerciales. Hoy se ven las casas de bancas ocupadas en su gran mayoría, por un personal compuesto de hijos del país, que desempeñan los cargos más importantes, pero que no han pasado por un establecimiento técnico que les haya dado la preparación necesaria a ese objeto. Ellos se preparan y adquieren esos conocimientos, prácticamente, e ignoran, como es consiguiente, aquellas materias que debe conocer un comerciante y que no se adquieren sino en academias y escuelas.

La Escuela de Comercio de Cuba es algo deficiente en su organización, por ser su plan de estudios limitado.

Nosotros entendemos que dentro del plan de estudios de una Escuela de Comercio deben comprenderse todas aquellas direcciones de la actividad que se relacionen con el comercio. Por eso, con muy buen acuerdo, las escuelas de París y Amberes, comprenden, como una rama de la carrera comercial, los estudios que deben hacer los agentes consulares y otros cargos afines.

En Cuba, por abandono de los llamados a atender estos asuntos, se ejercen muchas profesiones y destinos, para los cuales debían exigirse estudios especiales. Así tenemos, por ejemplo, los agentes de comercio, los periciales de aduanas, los miembros de la junta de protestas sobre aforos de aduanas, los cónsules, fieles almotacenes, contadores, y tenedores de libros de las oficinas públicas del Estado, la Provincia y el municipio y otros por ese estilo.

Claro es que esos estudios que hoy se cursan en la Escuela de Comercio de la Habana, deben ser ampliados para que dentro de su medio de acción comprendan a esos cargos especiales, ampliación fácil de hacer, porque la base o fundamento está hecho ya.

A ese cuadro de estudios establecidos en Cuba por la citada Orden 470 de 1900, debían agregarse las siguientes materias: Legislación y práctica fiscal y aduanera, legislación mercantil extranjera comparada, nociones de derecho civil y administrativo y legislación sobre marcas y patentes, redacción de instrumentos públicos y documentos comerciales, idioma alemán.

Esta ampliación de estudios abarca, como se ve, las carreras consulares y todo lo que a las aduanas se refiere, haciendo que el estudiante sea apto para el desempeño de dichos cargos, y sepa, ya que los cónsules tienen funciones notariales, redactar documentos de esta clase. Conviene sí, que la "Práctica del Comercio," se concrete especialmente al estudio de los bancos y bolsas a fin de comprender a los agentes y corredores de comercio. A los idiomas francés e inglés, convendría agregar el alemán, ya que el desarrollo comercial de Alemania es tan grande desde 1870 a la fecha, que amerita el aprendizaje de ese idioma.

Todos estos estudios deben hacerse con marcada dirección práctica, por ser esta la única manera de obtener un satisfactorio resultado en la enseñanza.

Creemos, pues, que el plan o cuadro de estudios que debe seguirse para una carrera comercial, es el siguiente: Teneduría de libros y contabilidad en general aplicada al comercio, práctica del comercio, especialmente en bancos y bolsas, geografía industrial y comercial, economía política y hacienda pública con relación al comercio, estadística aplicada al comercio, legislación mercantil, derecho mercantil internacional, nociones de derecho civil y administrativo, legislación sobre marcas y patentes, historia del comercio, reconocimiento de productos comerciales, idiomas—inglés, francés, y

alemán, legislación y práctica fiscal y aduanera, legislación y práctica consulares, legislaciones mercantiles extranjeras comparadas, redacción de instrumentos públicos y documentos comerciales.

No pedimos exclusivamente para nuestra nación ese plan: pensamos que debe ser general, porque estimamos que no son necesarios ni más ni menos estudios para obtener una instrucción suficiente para una carrera comercial.

Poco nos debe importar la distribución de esas materias en cursos, si bien deben observarse las naturales incompatibilidades que deben resultar y resultan del estudio simultáneo de alguna de ellas.

Creemos innecesario hacer distribuciones respecto a las clases de Escuelas en las cuales deben hacerse los estudios; porque consideramos que tanto en las Escuelas que forman parte del sistema escolar público, como en las sostenidas por dotaciones particulares, así como en las escuelas especiales de comercio que se hallen bajo la administración particular, la enseñanza debe ser uniforme y exigida por el gobierno. No se nos oculta que esas exigencias tienen sus límites naturales y legales; pero su radio de acción debe hacerse sentir no dando validez académica a los estudios hechos en forma distinta de la acordada por el Estado o por lo menos validez oficial para el desempeño de cargos públicos utilizados por el Estado.

El plan de estudios que proponemos es el que a nuestro juicio prepara mejor a los jóvenes para aprender la carrera comercial y que más se adapta a nuestro sistema educativo, y creemos que con muy poca diferencia es el que se sigue en casi todas las escuelas de comercio, y no sería difícil adoptar un plan uniforme de instrucción mercantil para todos los países panamericanos.

Ahora bien; ese plan de estudios comprende toda la actividad comercial y tal vez parezca muy vasto. Este defecto aparente se podría remediar con facilidad, haciendo o creando dentro del plan general, determinadas secciones para carreras especiales, que no necesitan estudios tan extensos, dejando la totalidad de éstos para los que deseen obtener, entre nosotros, el título de Profesor Mercantil, y en otros países el de Doctor en ciencias comerciales u otro título cuya denominación uniforme se acuerde.

Para que pueda apreciarse el plan de estudios que proponemos y sus diversas secciones, vamos a presentar el esquema de dichos estudios, expresando las carreras y las asignaturas que deben cursarse.

I.

Profesor Mercantil, Doctor o Licenciado en Ciencias Comerciales.—Teneduría de libros y contabilidad en general aplicada al comercio, práctica del comercio especialmente en bancos y bolsas, geografía industrial y comercial, economía política y hacienda pública, con relación al comercio, estadística aplicada al comercio, legislación mercantil, historia del comercio, reconocimiento de los productos comerciales, legislación mercantil internacional, nociones de derecho civil y administrativo y legislación sobre marcas y patentes, legislación y práctica fiscal y aduanera, legislación y práctica consulares, legislaciones mercantiles extranjeras comparadas, redacción de instrumentos públicos y documentos comerciales, idiomas—inglés, francés y alemán.

II.

Agentes mediadores de comercio (agentes de cambio y bolsas y corredores de comercio).—Teneduría de libros y contabilidad en general aplicada al comercio, práctica del comercio, especialmente en bancos y bolsas, legislación mercantil, reconocimiento de productos comerciales, redacción de instrumentos públicos y documentos comerciales, idiomas—inglés, francés y alemán, legislación sobre marcas y patentes y legislación y práctica fiscal y aduanera.

III.

Vistas o periciales de aduanas.—Teneduría de libros y contabilidad en general aplicada al comercio, estadística aplicada al comercio, legislación mercantil, legislaciones mercantiles extranjeras comparadas, derecho mercantil internacional, re-

conocimiento de productos comerciales, legislación y práctica fiscal y aduanera, idiomas—inglés, francés y alemán, legislación sobre marcas y patentes, estadística aplicada al comercio.

IV.

Agentes o corredores de aduanas.—Teneduría de libros y contabilidad en general aplicada al comercio, legislación mercantil, legislaciones mercantiles extranjeras comparadas, reconocimiento de productos comerciales, legislación y práctica fiscal y aduanera, estadística aplicada al comercio, idiomas—inglés, francés y alemán, legislación sobre marcas y patentes.

V.

Carrera consular.—Teneduría de libros y contabilidad en general aplicada al comercio, estadística aplicada al comercio, legislación mercantil, nociones de derecho civil y administrativo y legislación sobre marcas y patentes, legislaciones mercantiles extranjeras comparadas, derecho mercantil internacional, geografía industrial y comercial, reconocimiento de productos comerciales, legislación y práctica consulares, redacción de instrumentos públicos y documentos comerciales, legislación y práctica fiscal y aduanera, idiomas—inglés, francés y alemán, historia del comercio.

VI.

Peritos tasadores.—Geografía industrial y comercial, legislación mercantil, reconocimiento de productos comerciales, legislación y práctica fiscal y aduanera, idiomas—inglés, francés y alemán, legislación sobre marcas y patentes.

Estas son las secciones que podrán comprenderse dentro de la carrera comercial, reglamentando los estudios en cursos para su aprendizaje.

Como se comprenderá fácilmente, puede esa distribución ser objeto de modificaciones, pero en lo fundamental debe existir.

Bien ha hecho la subsección 10 sobre instrucción comercial, de la Sección IV del Congreso en dedicar su atención a este problema, porque desde hace largo tiempo, a los estudios comerciales no se les dedica la atención que se merecen.

Con razón ha dicho M. Léautey que a las clases superiores repugna el comercio; la clase media no le da sino los menos inteligentes y los menos instruidos de sus hijos; las clases inferiores ponen a los jóvenes estudiosos en las escuelas del Estado. Y cuando los unos y los otros, de estas dos últimas clases, se deciden, faltos de medios, a dirigir a sus hijos a los estudios comerciales, es porque creen que esta carrera no necesita de otra preparación que la que da la práctica. Esto, como se comprenderá fácilmente, es erróneo.

Hoy por fortuna se empieza a ver la necesidad e importancia de los estudios comerciales; se reconoce con justa razón, que la formación de un buen comerciante exige tanto método, estudio y esfuerzos, como la de abogado, médico o ingeniero; y es que el campo de acción del comercio es considerable, dado el desenvolvimiento que cada día adquiere, debido a los múltiples medios de comunicación.

El comercio reclama hoy hombres instruidos, científicos; no prácticos, y lejos de condenar a una vida monótona y pasiva al individuo, como afirman algunos, exige de éste un espíritu siempre despierto y una inteligencia siempre viva.

Una educación técnica comercial es necesaria para el engrandecimiento de la nación, y por eso debemos propender a que los ciudadanos adquieran esos conocimientos sólidamente, a fin de que constituyan hombres de acción y sean el exponente de la cultura de su patria, ya que el comercio, según se ha dicho, es el vehículo más poderoso de la civilización y el progreso.

¿CÓMO PUEDE UNA NACIÓN PREPARAR DE LA MANERA MÁS EFECTIVA A SUS JÓVENES PARA UNA CARRERA COMERCIAL QUE DEBA EMPRENDESE SEA EN DICHA NACIÓN O EN UN PAÍS EXTRANJERO?

Por AGUSTÍN T. WHILAR,

Director de la Escuela Normal de Preceptores de Lima, Perú.

IMPORTANCIA DEL COMERCIO.

El comercio ha influido poderosamente en el prodigioso desenvolvimiento con que la humanidad hoy se ufana, y continuará abriéndole cada vez más amplios y dilatados horizontes para la eficacia de su actividad, porque no dejará de poner a los pueblos en estrecha comunicación material e intelectual: causa permanente de imitación de usos y costumbres y de aplicación de ciencias y artes de las naciones más cultas y adelantadas; es el instrumento propio de las civilizaciones.

Según Savaray, él contribuye eficazmente al engrandecimiento material de las naciones contrarrestando la reducida extensión territorial a la pobreza del suelo, como acaece en Holanda, que sin producir nada abastece a los demás pueblos de lo que necesitan.

No es menos su benéfico influjo en el progreso agrícola, ya que proporciona a unos países nuevos productos para el cultivo, transportados de otros. Favorece, no menos, el desenvolvimiento de las ciencias por cimentarse en sus adelantos los fines que persigue, como florecen las artes a su bienhechora sombra.

Así esparce el comercio sus beneficios en todas las esferas sociales encontrando en él, quienes lo ejercen hábil y lógicamente, un manantial de ganancias lícitas; y el agricultor aumenta las suyas, satisface mayor número de necesidades dando salida a sus frutos y facilitando los medios de adquirir los objetos indispensables para la vida. El comercio nivela, pues, la abundancia, llama a todos los seres a compartir el trabajo de todos; contribuye a la difusión de las ideas, y lleva por todas partes la enseña bendita y gloriosa de la cultura humana. Viene a ser en el organismo social lo que la circulación en la vida fisiológica; y de ahí que se tenga por la manifestación externa universal y continúa del valor y potencialidad económica de las naciones que derraman por el mundo los frutos de sus campos y los productos de sus fábricas; por regulador de la situación de los mercados de las necesidades locales, de las preferencias de los consumidores, de las variaciones del gusto, y de los antojos y caprichos de la moda: ¡es el alma de la economía contemporánea!

CLASES DE COMERCIO.

La extensión y la complejidad de los actos comerciales, los servicios y la riqueza que han creado, obligan a dividir el comercio en clases, atendiendo al lugar y al modo, a la cantidad, a los objetos de que se trata, a la relación con las demás naciones y a los lugares donde se realiza. De aquí la compraventa, las comisiones, los transportes, la banca, los seguros, el cambio, el depósito, los alimentos, los tejidos, los materiales de construcción, los objetos suntuarios, el dinero, los efectos, el comercio público y privado, el internacional y colonial, el marítimo, el fluvial, por canales y lagos, de paz y de guerra, al por mayor y al por menor.

CUALIDADES MORALES E INTELECTUALES DEL COMERCIANTE.

Como quiera que el comercio comprenda variadísimos objetos y circunstancias, reviste múltiples formas; exige, como es natural, singulares prendas morales e intelectuales y no pocos conocimientos científicos, esto es, ha menester de una educación e instrucción tan grandes y extensas como las de cualquiera profesión, por difícil que sea.

Las cualidades morales e intelectuales deben adquirirse o perfeccionarse por medio de una educación ordenada y metódicamente seguida, a fin de inculcar con buen

éxito la aptitud para los actos comerciales, para el amor al orden, la economía, la perseverancia, la rectitud de juicio, el buen sentido, la probidad, la integridad, la veracidad, el espíritu de iniciativa, la decisión, la claridad en las ideas y todo aquello que constituye la experiencia profesional, las reglas propias del comercio y sus secretos.

CONOCIMIENTOS CIENTÍFICOS INDISPENSABLES PARA EL EJERCICIO DEL COMERCIO Y CONCEPTO DE LA ENSEÑANZA COMERCIAL.

A la par que el ejercicio del comercio exige las cualidades especificadas, reclama también no pocos conocimientos científicos especiales para el logro del mejor éxito en los negocios o actos comerciales. Así es indispensable conocer los lugares de producción y consumo, las rutas y vías de comunicación, los mercados de consumo, las tarifas de transporte general o especial, los derechos de aduanas, la manera de fabricar, la calidad y costo de los productos, el empleo o aprovechamiento hecho por el consumidor, etc.

Además de estos conocimientos y algunos otros relativos a la naturaleza particular de los productos vendidos relacionados con las circunstancias especiales de cada comarca, el comerciante necesita otras más generales que constituyen el espíritu por decir así, de las preparaciones mercantiles, tales como el conocimiento claro, sencillo y metódico de la contabilidad, darse cuenta cabal de la naturaleza de la materia de la producción y de las aplicaciones industriales; poseer teórica y prácticamente su lengua y las comerciales extranjeras de más importancia, y disponer de los instrumentos anexos, o sea la caligrafía, la estenografía, el dibujo; estar al tanto de los fenómenos económicos dominando los principios y las leyes que los regulan, y los jurídicos aplicables al comercio. Y como quiera que el aprendizaje de tan variadas y difíciles materias exige enseñanza metódica, la carrera comercial, como todas las demás, debe tener profesorado especial, pedagógicamente orientado, para el buen éxito de la enseñanza.

Ya que los profesores no se improvisan ni se reclutan en la calle, aun cuando dominen la ciencia que han de enseñar, deben tener preparación pedagógica especial porque sin ella los resultados serán frustráneos, o, por lo menos, muy arduo conseguir dar mediana enseñanza.

Los conocimientos científicos exigidos, pues, por la naturaleza, complejidad y fines del comercio son: Lengua nacional, raíces latinas, retórica mercantil, lenguas comerciales extranjeras, historia literaria, geografía económico-comercial, historia del comercio, cosmografía, matemáticas aplicadas, mineralogía, contabilidad general y especial, economía política, comercial e industrial, hacienda pública, moral práctica, cívica y comercial, derecho civil y administrativo, derecho comercial, legislación mercantil comparativa, legislación fiscal, estadística general y aplicada, sociología, caligrafía, dibujo, psicología del comerciante, teoría de la enseñanza mercantil, metodología general, metodología aplicada a la enseñanza mercantil.

Dada la naturaleza, extensión y variedad de estos conocimientos, se infiere: (a) que la enseñanza comercial debe ser educadora, (b) que debe proporcionar conocimientos científicos, literarios, lingüísticos, morales, cívicos, económicos, técnicos, jurídicos teórico-prácticos y pedagógicos especiales, (c) que su finalidad debe ser general, especial y profesional: general por su plan científico; especial por la dirección que da a la atención de los alumnos sobre actos de comercio, por la importancia atribuida al estudio de la contabilidad, de la economía industrial y comercial, a las lenguas comerciales, a la caligrafía, al derecho, a la legislación, a la economía política, a la hacienda pública; profesional porque el estudio razonado de lo que se practica en las fábricas, en los talleres, en los bancos, en el comercio, donde está la fuente del orden del método para la aplicación práctica y para la lección objetiva, como que prepara para el profesorado mercantil.

Estos puntos de vista, la complejidad y el crecido número de operaciones comerciales, obligan la aplicación del principio de la división del trabajo, a fin de dar cabida

a no pocas personas que ayudan o auxilian al comerciante, denominadas auxiliares, cuyas clases varían según los países y la legislación, porque necesitan también educación e instrucción comercial.

Para ser, pues, hoy un buen comerciante, no basta, como antaño, conocer bien solamente un artículo, una mercancía y la región productora, se necesita estar al tanto de todo lo que ocurre en el mundo.

Hoy, dice Siegfried, es indispensable poder darse cuenta, instantáneamente al abrir un periódico diario, de la influencia que pueden tener los despachos telegráficos, de cualquier otro país. Para ello se necesita saber muchas cosas, no sólo, poseer las bases de los negocios, esto es, conocer la contabilidad, los cálculos de los cambios de precio, de valores y arbitrios, la geografía comercial; hablar, o en todo caso, comprender varias lenguas, ser economista, hacendista, cambista en cierta medida; es indispensable en una palabra, haber adquirido la ciencia comercial. De aquí la sabia y célebre frase de Goethe, "No sé que exista espíritu más extenso y cultivado que el de un gran comerciante."

ORIGEN DE LA CULTURA COMERCIAL Y SU ESTADO EN NUESTRA ÉPOCA.

Evidenciada la importancia del comercio, la clase de preparación que exige y la diversidad de operaciones realizadas con la cooperación de no pocos auxiliares, no obstante, los Estados y los particulares no se percataron, en todo tiempo, de la necesidad de la preparación técnica del comerciante, porque antes del siglo XIX, la enseñanza secundaria clásica fué la única fuente de cultura hasta nuestra época y el único fundamento de la educación nacional. A su calor formáronse los espíritus, disciplináronse las inteligencias, influyendo poderosamente en todas las manifestaciones del ingenio; pero como tal enseñanza no podía por sí sola satisfacer las múltiples necesidades y exigencias sociales, algunos pensadores pidieron, con insistencia, en el siglo XVIII, la sustitución de otra enseñanza más adecuada a las nuevas direcciones sociales. Y después de mucho discutir y largo batallar, surgieron nuevas instituciones docentes enderezadas a contribuir a la cultura general de la juventud estudiosa predominando en ellas la enseñanza de las lenguas vivas, sin dejar de satisfacer otras exigencias de orden teórico, sentidas en nuestra época. Este movimiento se propagó, rápidamente, dentro y fuera de cada nación allí donde la necesidad de una enseñanza especial era más imperiosa.

En los años 1804, 1808, 1815, 1816, 1829, y 1843 aparecieron en Francia diversas escuelas profesionales, siguiendo luego el ejemplo Bélgica, Alemania, Italia, España, y América; extendiéndose también el movimiento por establecer escuelas de comercio, aunque muy pocas hasta 1850, tomando impulso la fundación de escuelas comerciales hacia la mitad del siglo XIX, alcanzando la enseñanza mercantil una organización general, verdadera y apropiada a las necesidades sentidas. Pero la revolución no se realizó en todas partes, aunque en todas se han establecido escuelas especiales industriales y comerciales. De aquí nace la restricción del influjo de la enseñanza clásica que originó otra nueva, llamada más tarde a desenvolverse vigorosamente y destinada a completar la educación clásica, constituyendo así uno de los principales factores de prosperidad económica y de progreso moral y civil. Pero al principio, en verdad, ningún Estado floreciente sentía la necesidad de estimular y desenvolver la instrucción mercantil, porque cada país tenía que proveer, casi exclusivamente y sin competencia extraña, al mercado interior y colonial, reservados con excesivo celo, a la producción nacional. Desenvolviése así el comercio sin obstáculos insuperables, ni choques violentos y sin imponer a los comerciantes la necesidad práctica de adquirir conocimientos especiales y profundos acerca de las condiciones económicas de los países extranjeros por no ofrecerse la oportunidad de su utilización en las relaciones del comercio exterior.

Impuestas por cada Estado, civilización y lenguas en sus respectivos mercados y colonias, limitóse la enseñanza de las lenguas extranjeras quedando reducido e

influjo político, militar y civil a una sola cosa, por practicarse en el mismo campo, y la preparación comercial, limitada en las administraciones mercantiles; bastaba la experiencia individual para las exigencias del tráfico.

A mediados del siglo XIX, el desarrollo industrial colocó a todas las naciones europeas en un pie de igualdad que hizo inútil el régimen restrictivo de la navegación y del comercio, dando amplio espacio a la comunicación internacional, imponiendo la necesidad de una preparación técnica idónea.

La nueva dirección dada por Inglaterra a la política comercial transformó las relaciones internacionales y económicas, como se transformaron los métodos industriales en todo el mundo, en la última mitad del siglo XVIII impeliendo a todas las naciones europeas al nuevo arreglo técnico y económico de la producción manufacturera. Ninguna nación podía disputarle el cetro industrial y comercial a Inglaterra y favorecida por tan peregrina situación, sólo aspiraba al perfeccionamiento de las clases técnicas de la producción aún no superadas.

En el ínterin, los demás países aumentaban su producción manufacturera favorecidas por las escuelas industriales, tiempo ha poseídas por Inglaterra.

Sonó, pues, la hora en que las demás naciones se resolvieron a afrontar el mercado del mundo disputándosele a los ingleses.

Las exposiciones internacionales de Londres (1851); de París (1867); de Viena (1868), iniciaron una nueva economía e inauguraron una lucha comercial internacional, considerándose cada nación técnica y suficientemente preparada para ocupar todos los mercados; y dieron así muerte al monopolio industrial inglés. Desde este instante cristalizan los esfuerzos de Europa y los Estados Unidos de América, para proteger a los industriales y comerciantes en sus empresas de penetración en los mercados coloniales extra-europeos y la conquista de ellos abierta para todo el mundo, mientras los mercados europeos, con excepción del de la Gran Bretaña, se defendían con elevados derechos de frontera.

Establecieronse entonces algunos museos comerciales, sociedades de exportación y otras instituciones análogas destinadas a promover y apoyar las exportaciones nacionales, merced a los esfuerzos de los cónsules que hasta esa época sólo tenían representación diplomática. La insuficiencia era general, faltaba la experiencia y la organización comercial; era indiscutible la necesidad de comerciantes aptos para patrocinar las corrientes, dotados, si no de la experiencia tradicional, por lo menos de un cúmulo de conocimientos teóricos suficientes para la lucha internacional mercantil. He aquí el origen de la cultura comercial expuesta siquiera en cifra.

Los Estados, que tuvieron antes la enseñanza comercial por cosa de poca importancia alentaron, ayudaron eficazmente, la iniciativa privada, la tarea de promover, de disciplinar y dirigir esta enseñanza tornándola en un ramo principal del sistema didáctico nacional, y tienen hoy grande interés en preparar, de la manera más práctica y elevada, a las generaciones comerciales de mañana.

La enseñanza comercial sigue hoy, paralelamente, la experiencia económica de cada país y al compás que aumenta la utilidad y la complejidad de la vida, déjase sentir también la necesidad imperiosa de comerciantes de extensa y sólida instrucción directa y convenientemente adquirida, como factor de buen éxito. Nace de aquí el anhelo contemporáneo de preparar, científicamente, lo más completamente posible, a las personas destinadas a ocupar puestos visibles en la vida económica; y es ya necesidad inaplazable dar nuevas direcciones a los estudios comerciales, porque la vida económica contemporánea, no puede patrocinarse con la sola experiencia y con el auxilio exclusivo de los conocimientos profesionales.

Para conocer, valorizar o interpretar las leyes que rigen el mundo económico, se ha menester una cultura completamente científica, proporcionada por medio de métodos y procedimientos inherentes a la enseñanza superior, aunque no faltan todavía inteligencias miopes que no alcancen a ver la necesidad de un plan de estudios científico

para la carrera del comercio, y existen no pocos comerciantes que repugnan los estudios que en su sentir no son prácticos, esto es, que no proporcionan, según ellos, conocimientos de inmediata aplicación.

GRADOS Y CLASES DE ENSEÑANZA COMERCIAL; SU NATURALEZA Y FINES.

El crecido número de materias de enseñanza exigido por las imperiosas necesidades mercantiles; la importancia absoluta y relativa de cada asignatura y la extensión y profundidad de los estudios científicos y profesionales, han impuesto la división de la enseñanza comercial en dos grados; uno profesional y otro universitario.

La determinación de la línea de desenvolvimiento que cada nación puede seguir, a fin de dar el mayor auge y eficacia a la enseñanza especial o profesional, se debe a los congresos internacionales de enseñanza teórica y a las asociaciones de importancia establecidas en Alemania, Francia, Suiza, Italia, España y Estados Unidos de América. Esta enseñanza ofrece hoy caracteres fundamentales y comunes. Los planes de estudios son substancialmente idénticos en todas partes para este grado de enseñanza; sólo difieren los programas en la extensión justificada en cada plantel por sus propios y especiales fines. La enseñanza especial o profesional satisface a una numerosa clase de comerciantes y agentes de comercio, que ofrecen no pocos grupos con especialísimas exigencias, debiendo, por lo mismo, fijar su propia organización para satisfacer las necesidades de este linaje de alumnos. De aquí la subdivisión de este grado de enseñanza en inferior, media y superior. Esta subdivisión de la enseñanza profesional ha creado tres clases de escuelas de comercio: Inferiores, medias y superiores, sin exigir la sucesión de una clase a otra, como se realiza de la primera enseñanza a la segunda y de ésta a la superior. Cada clase de escuela tiene finalidad propia y exclusiva y en cada una de ellas, el curriculum de estudios es completo, impartiendo instrucción integral, tenida por suficiente para las categorías especiales de alumnos en cuyo provecho se organizó tal enseñanza. Pero nada impide el que se pueda pasar de una escuela a otra para adquirir nociones profesionales más amplias y profundas, especialmente de las escuelas medias a las superiores, sin que sean, desde luego, preparatorias, esto es, que la inferior prepare para la media y ésta para la superior, como pudiera creerse.

La enseñanza profesional inferior tiene diversas y notables modalidades, en cada país, debido al reclutamiento de los alumnos.

La escuela de comercio media se dedica a preparar una categoría de comerciantes y empleados de comercio más elevada que la de las escuelas inferiores que las circunstancias de la vida pueden llamar a distinguidas posiciones. De aquí la relativa extensión de las nociones técnicas proporcionadas y la continuación de la obra de cultura general iniciada en la escuela comercial inferior. El desenvolvimiento de cada uno de los ramos de enseñanza, que informan el plan de estudios de las escuelas de comercio medias no es idéntico en todos los países, pero sí comprende materias de cultura general y cursos de instrucción especial o profesional.

La escuela superior de comercio, denominada también "escuela de altos estudios comerciales" imparte enseñanza profesional más extensa y profunda, y prepara para las instituciones comerciales o industriales, que exijan el grado más elevado de educación e instrucción comercial y habilita, también, para el profesorado mercantil. Hay variedad de tipos en Bélgica, Francia, Suiza, España, Italia, Portugal, Argentina, etc., siendo el prototipo de todas, el Establecimiento Superior de Comercio de Amberes y llama hoy la atención pública, el Instituto Comercial de Roma por su original organización.

Las naciones de habla teutónica e inglesa no dan muestra de percibir la necesidad de esta casta de escuelas, habiendo desenvuelto ampliamente la enseñanza inferior y media. Aun cuando las escuelas superiores de comercio difieren en los países citados, y aun dentro de cada país, como en Suiza, pongo por caso, por responder a finalidades diversas, no obstante todas reclutan a sus alumnos de personas ventajosa-

mente colocadas y comprenden en sus planes de estudios: (a) Ciencias matemáticas, físicas, mecánicas con sus derivaciones concretas, comerciales, industriales y agrícolas; (b) ciencias jurídicas; (c) ciencias económicas; (d) historia y geografía comerciales; (e) sociología; (f) lengua nacional, extranjeras e historia literaria; (g) enseñanzas abstractas y concretas indispensables para la disciplina mental, moral y cívica, y la correcta y elegante comunicación oral y escrita del pensamiento.

El grado universitario comprende la enseñanza comercial más elevada que la superior por el método y la orientación especialísima de sus estudios. Existe en los Estados Unidos de América, Inglaterra, Suiza, Bélgica e Italia, con diversa organización, habiendo cristalizado perfecta y hermosamente en la Universidad Comercial de "Luis Bocconi" de Milán. Ésta ya célebre universidad comercial asegura, con la especialización de los cursos, una preparación más directa para el estudio de ciertas materias técnicas. Ha logrado conciliar la necesidad de generalizar la enseñanza comercial con la de especializar la que proporcionará a los alumnos un estudio más inmediato; en esto se diferencia de las universidades comerciales extranjeras realizando algo más orgánico y eficaz.

La Universidad Comercial de Zurich expide los siguientes títulos: diploma de ciencias comerciales, diploma para la enseñanza de estas ciencias y doctorado de economía política.

El plan de estudios de las universidades comerciales panamericanas debe diferenciarse completamente del de las escuelas superiores y comprender, a semejanza del de la Universidad de Comercio de Milán, una parte de enseñanza general, común y obligatoria para todos los alumnos, y otra de cursos especiales, a voluntad, relacionados con la ciencia económica para poder estudiarse con más detención y profundidad y con interés más directo en la vida del tráfico.

La enseñanza general asegurará a los alumnos la adquisición de un conjunto orgánico de conocimientos económicos extensos, base de todo estudio posterior realizable para cualquiera de los variados ramos comprendidos en las escuelas profesionales.

Los cursos especiales prepararán para la dirección de grandes establecimientos económicos comerciales y solución de los problemas relacionados con ellos.

Ahora; como quiera que la difícil y harto complicada enseñanza comercial, en sus grados y clases, exija profesores idóneos, y pedagógicamente preparados, para la propia eficacia de ella, incumbe a la universidad comercial formarlos, ya que en su seno se debe impartir enseñanza especializada.

OBSTÁCULOS QUE SE OPONEN A LA ENSEÑANZA COMERCIAL Y A SU DIFUSIÓN PRINCIPALMENTE EN AMÉRICA.

No obstante la importancia y trascendencia indiscutible del comercio y el empeño desplegado por los gobiernos, para la mejor organización comercial profesional, atendidas las múltiples necesidades de cada país, algunos obstáculos impiden el progreso y la difusión de tan útil y necesaria enseñanza.

Desde luego, adviértase sin esfuerzo en todas partes que las clases superiores repugnan el comercio, las medias le dedican los miembros menos inteligentes, menos instruidos o los fracasados en los primeros años de la enseñanza secundaria, y las inferiores se dedican, preferentemente, a los oficios y otros menesteres. Y cuando estos últimos se deciden a falta de mejor carrera por la mercantil, es convencidos de que no necesitan otra preparación que la práctica de la misma, o sea, el simple aprendizaje vulgar, como acontece generalmente en América.

Las escuelas de comercio desdénadas por las clases superiores y consideradas como una superfetación por la clase media, están condenadas, fatalmente, a ser refugio de los parias de la enseñanza, y explícate así como en la hora presente, a pesar de larga y meritísima lucha, no haya el número exigido por la población comercial de cada país y por sus exigencias mercantiles. Impide también el desenvolvimiento gradual de esta enseñanza y la multiplicación de las respectivas escuelas, la carencia de capital sufi-

ciente, esto es, de medios de acción, de publicidad, y la insuficiencia de la sanción de la enseñanza. De aquí, la falta de instalaciones completas y adecuadas y de medios de propaganda y difusión.

Las condiciones de ingreso, que habilitan para seguir la enseñanza universitaria y especial técnica, restan población escolar a las escuelas de comercio inferiores y medias.

De las consideraciones expuestas se infiere claramente, que la enseñanza comercial panamericana exige condiciones especialísimas para que adquiera mayor desenvolvimiento y difusión, y el reclutamiento de los alumnos sea más fácil, sin dejar de exigirles preparación conveniente. Estas condiciones atañen a la organización de la enseñanza inferior y a las condiciones de ingreso en estas clases de escuelas. Cuanto a lo primero se ha menester crear secciones inferiores de comercio en las escuelas primarias superiores y en los colegios de segunda enseñanza; secciones que inicien a los alumnos en las ciencias comerciales fundamentales y en sus principales prácticas; y los certificados de suficiencia que otorguen, habilitarán para el ingreso en las escuelas inferiores y medias, respectivamente.

CONDICIONES QUE ELUCIDAN EL TEMA PROPUESTO.

Expuestas, someramente, las consideraciones generales enderezadas al esclarecimiento del tema propuesto para este Segundo Congreso Científico Panamericano, que me cabe la alta y singular honra de tratar, lo dividiré en cada una de sus partes, separando las cuestiones para dar las soluciones a mi humilde entender, más convenientes.

¿Cómo puede una nación preparar de la manera más efectiva a los jóvenes para la carrera comercial que debe emprenderse, bien sea en dicha nación o en un país extranjero? (a) ¿En las escuelas que forman parte del sistema escolar público? (b) ¿En las escuelas sostenidas por dotación particular?

La manera más eficaz de preparar a la juventud para la carrera comercial, dentro o fuera del país, comprende diversos medios: unos referentes a las escuelas y otros, a los alumnos a las instituciones protectoras y a la enseñanza misma.

Medios referentes a las escuelas: (a) Organizar convenientemente la enseñanza comercial en sus dos grados y tres clases, en las localidades comerciales de importancia, empezando por secciones establecidas en las escuelas comunes superiores oficiales y particulares y en los colegios de segunda enseñanza nacionales y particulares. Estas secciones preparatorias, que sólo impartirán las nociones fundamentales del comercio, despertarán la vocación, iniciarán la educación e instrucción comerciales y evidenciarán la importancia, utilidad y conveniencia de estudiar, debidamente, carrera tan lucrativa e importante en las escuelas inferiores y medias de comercio, quedando después, los alumnos preparados para dominar los estudios comerciales superiores y universitarios.

(b) En las escuelas superiores de comercio, que se encuentran bajo la administración particular:

1. Subvenciones especiales del Estado, de los municipios, de las cámaras de comercio para que posean material escolar completo e impartan enseñanza objetiva;
2. Protección del Estado para la fundación de escuelas inferiores y medias de comercio con plan uniforme;
3. Protección del Estado, de los municipios, de las ciudades comerciales y de las cámaras de comercio para la fundación de escuelas de comercio;
4. Protección de las grandes empresas económico-comerciales e industriales para la fundación en la capital de cada república de una universidad de comercio;
5. Inspección especial del Estado y de las cámaras de comercio de la enseñanza y otorgamiento de premios pecuniarios y honoríficos a las mejores escuelas de comercio, a fin de asegurar la buena enseñanza y la conveniente emulación;
6. Obligar la exposición permanente, durante el año escolar, de los trabajos de los alumnos para premiar, anualmente, a los más notables con diplomas y medallas;

7. Creación de cursos internacionales, de expansión comercial en las ciudades comerciales de importancia, dados en las lenguas del país organizador, con carácter universitario;

8. Creación de academias nocturnas de comercio para empleados que no puedan progresar por falta de conocimientos técnicos.

Medios referentes a los alumnos, a las instituciones comerciales y a la enseñanza:

1. Multiplicación de bolsas de viaje por el Estado, los municipios y cámaras de comercio para perfeccionamiento o especialización de alumnos aprovechados;

2. Creación de certificados o diplomas de aptitud comercial para dar acceso preferente, a los empleos públicos que requieran conocimientos técnicos;

3. Exigir, para el ingreso en las escuelas inferiores de comercio, el certificado de haber concluido la enseñanza primaria superior o la preparatoria comercial;

4. Exigir, para el ingreso en las escuelas de comercio, el certificado de matemáticas elementales, física experimental, química general, botánica, historia y geografía universal, o haber cursado la sección comercial de un colegio de segunda enseñanza;

5. Exigir para el ingreso en las escuelas superiores o en la universidad de comercio, el certificado de segunda enseñanza, o el diploma de enseñanza media comercial;

6. Supresión del pago de derechos de matrícula, exámenes, certificados, diplomas de las escuelas de comercio oficiales y particulares;

7. Creación del doctorado comercial para la enseñanza mercantil en sus grados y clases, con las mismas franquicias que los profesores de las universidades;

8. Este doctorado habilitará para el profesorado en cualquiera República americana.

Medios referentes a las instituciones comerciales:

1. Crear un consejo superior de enseñanza técnica, para su conveniente organización y vigilancia; para la elaboración de programas y estudiar constantemente, la manera más eficaz de preparar a los jóvenes en las diversas ramas de la enseñanza comercial, a fin de sacar el mayor partido útil de la enseñanza, inteligencia y disciplina de los futuros comerciantes e industriales.

Medios referentes a la enseñanza:

1. Exigir que la enseñanza comercial sea teórico-práctica, instructiva, educadora y con carácter experimental;

2. Que sea metódica, poniendo sin cesar en actividad las fuerzas intelectuales de los alumnos, solicitando su atención y ejercitándolos en deducir lo que deben conocer, de lo que deben dejar;

3. No permitir enseñanza comercial sin el uso del material correspondiente, porque esta enseñanza tiene por objeto, no sólo la educación intelectual, sino la de los sentidos que deben ejercitarse por medio de lecciones objetivas, que enseñan al mismo tiempo, las leyes a que están sujetos los casos estudiados, a practicar, manipular, apreciar, distinguir y sacar partido comercial de todo lo observado.

4. No permitir la apertura de escuelas comerciales, sin que posean el mínimo de las instalaciones necesarias para que llenen cumplidamente sus fines especiales, desde el triple punto de vista comercial, industrial y agrícola; porque el comerciante contemporáneo debe estar al tanto, no sólo de la merceología, sino de los procedimientos de producción, de fabricación de las mercancías sobre las que debe operar inteligentemente, para estar en condiciones favorables contra la concurrencia y poder aconsejar, atinadamente, al productor o al fabricante.

5. El material escolar de las escuelas de comercio comprenderá: (a) Un museo comercial compuesto de muestrarios de materias primas y productos manufacturados nacionales y mercaderías, de su procedencia y consumo; de una colección de mapas geográficos, comerciales, industriales, agrícolas y estadísticos, de diversos países; cartas de vías de transportes con leyendas explicativas sobre tarifas y la manera de aplicarlas; una colección de monedas de todos los países con sus leyendas comparativas sobre la naturaleza, el valor, título, etc., de las diversas monedas como de los

especímenes de las diferentes medidas de longitud y volumen con las equivalencias de los pesos y las medidas nacionales; una colección de estampillas de diversos países y cuanto interese al comercio nacional e internacional; (b) un laboratorio para las manipulaciones con aparatos y los instrumentos de física y de química apropiados y los transmisores de movimientos mecánicos; (c) una biblioteca compuesta de libros referentes a las asignaturas enseñadas en las escuelas, y publicaciones comerciales de autógrafos de cursos y de conferencias dados en la escuela; una colección de expedientes auténticos judiciales y extra judiciales, comerciales y civiles, anotados por los profesores de derecho, a fin de poder mostrar el mecanismo de las incorrecciones, abusos y picardías en los procesos; (d) las escuelas inferiores y medias de comercio tendrán una oficina de práctica comercial, siguiéndose de preferencia, el sistema americano de libretas.

Las escuelas superiores y las universidades de comercio, fuera del museo, tendrán un "banco modelo."

El museo comercial de estos últimos establecimientos será más extenso que el de las escuelas inferiores y medias, y tendrá por objeto enseñar, e informar a fabricantes manufactureros, mediante el conocimiento de los productos, acerca de los consumidores y de los productores. En el museo se enseñarán las ciencias comerciales, naturales, agrícolas, etc. Se estudiarán, prácticamente, los actos comerciales, y se proporcionarán noticias interesantes sobre fábricas preferidas y gustos especiales de diversas localidades nacionales y extranjeras. Las muestras de este museo estarán clasificadas en libros especiales, haciéndose constar el país productor y el origen según los casos. Las colecciones se considerarán desde tres puntos de vista: (a) Muestrarios de productos de exportación; (b) muestrarios de productos de importación; (c) muestrarios de embalajes y aderezos o aprestos. Estos muestrarios deben componerse sólo de materias que se adapten a formar colecciones en libros como telas, papeles, pieles, etc. Las colecciones contenidas en vajijas y las mineralógicas, anatómicas y geológicas, etc., se dispondrán en estanterías adecuadas para su fácil manejo y estudio. Habrá también una colección de catálogos ilustrados. El banco modelo tendrá por objeto utilizar los conocimientos adquiridos en los estudios de lenguas comerciales, de derecho y de otros ramos para enseñar cómo deben iniciarse, desenvolverse y liquidarse las distintas operaciones mercantiles, para ejecutarlas en la correspondencia, en los cálculos, en los registros y en la formación de las actas y documentos relacionados con las susodichas operaciones; en una palabra, poner a los alumnos en aptitud de tomar parte en la vida comercial, no bien hayan terminado sus estudios, con pleno dominio del mecanismo de los negocios, sin sentir las dificultades de una preparación práctica posterior. Los aspirantes al doctorado comercial, para ejercer el profesorado, practicarán también en el "banco modelo"; (e) Se establecerán visitas sostenidas por todas las escuelas comerciales, porque ellas constituyen los ejercicios prácticos más sencillos y hacederos y consistirán en examinar los establecimientos comerciales, industriales y sociales, primero a título colectivo y después a título individual. A las visitas colectivas precederán conferencias en las cuales se describirá, a grandes rasgos, el organismo económico que ha de visitarse. Estas visitas deben desenvolver el hábito de la observación y conducir a la reflexión y estimular, mediante ciertos ejercicios, la iniciativa.

Delinear el plan de estudios que prepare mejor a los jóvenes para emprender dicha carrera comercial. Cada esquema sugerido deberá considerar, no sólo el carácter del sistema educativo del país para el cual se intente establecer el plan general, sino la conveniencia y posibilidad de llevar a la práctica un curso uniforme de instrucción comercial para todos los países panamericanos.

A. Plan bienal para la enseñanza comercial preparatoria de las escuelas primarias superiores: Lengua nacional con aplicación a la práctica del comercio, organización del comercio nacional e internacional, contabilidad sencilla superior, geografía eco-

nómica, aritmética comercial, dactilografía, caligrafía y estenografía, dibujo, trabajo manual educativo—ejercicios físicos, práctica comercial por el sistema de libretas, visitas sistemáticas a los centros comerciales e industriales.

B. Plan de estudios bienal para la sección comercial preparatoria de los colegios de segunda enseñanza: Lengua nacional con aplicación a la práctica del comercio, lengua comercial extranjera, según las exigencias locales, correspondencia mercantil, teneduría de libros, aritmética comercial, geografía económica, estenografía, caligrafía, dibujo, dactilografía, trabajo manual educativo—ejercicios físicos, visitas sistemáticas.

Observaciones comunes a ambas secciones preparatorias: (1) La teoría de las asignaturas se enseñará en el primer semestre. Se impartirá intuitivamente; los profesores pondrán en manos de los alumnos los documentos comerciales. Las aplicaciones a que dé lugar la teoría se escogerán de modo que puedan prepararse los documentos en la práctica; (2) la práctica seguirá a la teoría en el segundo semestre; (3) la correspondencia no será objeto de un curso seguido. Se darán noticias en el momento y en la medida que la ocasión presente en la serie de operaciones prácticas.

C. Plan de estudios trienal, para las escuelas inferiores de comercio, con un año preparatorio:

Año preparatorio.—Matemáticas elementales, lengua nacional, elementos de historia universal, dibujo general y caligrafía.

Primer año.—Lengua nacional con aplicación a la práctica del comercio, organización del comercio nacional e internacional, matemáticas elementales aplicadas, estenografía, trabajo manual educativo, ejercicios físicos y militares, música vocal.

Segundo año.—Lengua nacional con aplicación a la práctica del comercio, geografía económica, lengua comercial extranjera, teneduría de libros aplicada a toda clase de empresas, estenografía, ejercicios físicos y militares, música vocal.

Tercer año.—Correspondencia mercantil, contabilidad, historia del comercio, nociones de economía política, nociones de derecho usual, estenografía, práctica comercial, visitas sistemáticas.

Observaciones.—(1) Las notas, las facturas y las cuentas dadas, a título de ejercicios, se escogerán para que puedan utilizarse en la práctica. (2) Las nociones de Economía y Derecho se limitarán a lo indispensable para la redacción de documentos y otorgamientos de escrituras. (3) La correspondencia no será objeto de curso seguido.

D. Plan de estudios cuatrienal para las escuelas medias comerciales: Lengua nacional, retórica mercantil e industrial, raíces griegas y latinas, lenguas comerciales extranjeras e historia literaria, geografía económico-comercial, estadística general, historia del comercio, matemáticas aplicadas, merceología, vías de transporte, útiles industriales y agrícolas, comercio, contabilidad general, moral social y comercial, derecho civil, derecho comercial, derecho marítimo internacional, legislación comercial comparativa, legislación fiscal, caligrafía (aplicaciones), dibujo, música vocal, práctica comercial y visitas sistemáticas, administración de sociedades.

Observaciones.—En el curso de práctica comercial se enseñará: A redactar la correspondencia en varias lenguas comerciales; a preparar listas de precios, la rutina de vender; a preparar los documentos necesarios para las operaciones precedentes; a recibir y a entregar mercaderías; método de reducción de monedas; medios de cambio, órdenes postales, cheques, letras; manera de abrir, llevar y saldar la cuenta bancaria; constitución de las firmas y compañías comerciales; los seguros, etc. Todo relacionado con el comercio interior.

En cuanto al comercio exterior, se enseñará, cálculos sobre el precio de las mercaderías en la plaza del consumo en pesos, medidas, y medidas extranjeras; procedimientos en la recepción de órdenes, esto es, lugar de compras, embalaje, embarque y seguro; calcular las leyes aduaneras y arreglos respecto de los cambios extranjeros con todas las operaciones subsidiarias; esto es, conocer el conjunto de los actos relacionados con la importación y exportación de mercaderías; formación y empleo de

códigos telegráficos y envíos de mensajes en lenguaje común, en código y en cifras; incorporación y registro de buques, significado y usos de las facturas y los sobordos; costo comparativo y desventaja de las rutas comerciales.

Plan bienal para las escuelas superiores de comercio: Lengua nacional, retórica y lógica, raíces griegas y latinas, literatura comparada, actualidades geográficas, matemáticas aplicadas, merceología, comercio, contabilidad pública y de empresas, correspondencia comercial e industrial, economía comercial e industrial, código de comercio, código civil, legislación fiscal comparada y de presupuestos, práctica comercial, tratados de comercio, economía política, estadística, elementos de biología, elementos de sociología.

Cursos voluntarios: Derecho administrativo, derecho constitucional, historia diplomática, derecho internacional, derecho consular.

Observaciones.—En el curso de actualidades geográficas se estudiarán los asuntos y los acontecimientos tendientes a modificar la situación de las naciones y las consecuencias de tales acontecimientos.

Plan de estudios para las universidades de comercio: Ciencias económicas, principios de economía política, historia crítica de los principales establecimientos comerciales económicos, hacienda pública, principios de estadística, estadística económica, historia económica, geografía económica, cursos especiales.

Ciencias jurídicas especiales: Derecho constitucional, derecho administrativo, institución de derecho civil, derecho comercial e industrial, derecho internacional mercantil.

Ciencias técnicas: Matemáticas financieras, contabilidad general y especial, banco modelo, merceología.

Ciencias pedagógicas aplicadas: Psico-pedagogía, psicología de la adolescencia, teoría y práctica de la enseñanza mercantil, metodología general, metodología especial.

Observaciones.—(1) Los cursos universitarios son obligatorios y voluntarios; los primeros habilitan para optar al título de doctor en ciencias comerciales, y los segundos para especializarse en determinadas materias o dedicarse al profesorado mercantil; (2) los cursos obligatorios se harán en dos años y son los signados con los números 1, 3, 4 y 7 en ciencias económicas; 3 y 4 en ciencias jurídicas; 1, 2, 3 y 4, en ciencias técnicas. Todas las demás son a voluntad y durarán dos años. La Universidad doctorará en cada grupo de ciencias.

Plan de estudios trienal para las Academias nocturnas de empleados que no progresan por falta de conocimientos técnicos: lenguas comerciales extranjeras (a elección); métodos modernos de importación, exportación, incluyendo fletes y medios de transportes; merceología, mercados interiores y exteriores y estudio de costumbres comerciales; tarifas extranjeras, pesas y medidas, monedas y cambios; tecnicismos de documentos comerciales; leyes comerciales; teneduría de libros; correspondencia mercantil; economía política y comercial; usos de la estadística comercial; esteno-dactilografía.

Plan anual de los cursos internacionales de carácter universitario: (1) Estudio del desenvolvimiento de la nación, tanto en lo interior como en sus relaciones con los otros pueblos. (2) Profundizar las cuestiones relativas a la enseñanza de las ciencias mercantiles. (3) Discusión de los métodos y procedimientos empleados en la enseñanza de las lenguas extranjeras desde el punto de vista comercial. Ejercicios prácticos; conocimientos del país y de sus instituciones comerciales e industriales por medio de excursiones; ejercicios prácticos de contabilidad comercial e industrial; conocimientos sobre puntos referentes al comercio de ganado, a las industrias metalúrgicas, y a la legislación comercial comparativa; política aduanera; vías de comunicación; monedas; cambios; metrología; tratados de comercio; establecimientos y explotación de ferrocarriles; oficina internacional de trabajo y protección obrera; seguros; cámaras de comercio; la industria eléctrica; diversas clases de bancos; su papel económico; el arbitraje internacional; la industria de la leche; temas de actualidad mercantil.

HOW CAN A NATION PREPARE IN THE MOST EFFECTIVE MANNER ITS YOUNG MEN FOR A BUSINESS CAREER THAT IS TO BE PURSUED AT HOME OR IN A FOREIGN COUNTRY?

By A. AUBERT,

Professor of the Instituto Nacional de Occidente, Nicaragua.

In attempting to develop the theme embodied in the foregoing proposition, in order to make clear and comprehensible the subject at issue, we may be permitted to indulge in a few preliminary remarks by way of introduction.

A commercial career must, we understand, be the outcome and part of some system of general and industrial training, where young men may acquire not only the rudiments of knowledge adequate for any determined and special calling, but a mastery of those elements which must perforce establish an unmistakable superiority and advantage of what may very properly be called "skilled training" over and above the more common and ordinary form of "unskilled labor."

Undoubtedly in our days, technical and skillful training imposes itself advantageously in the different pursuits of human activity, in which, however, a classification or discrimination of service exists. Such a classification may be attempted and made considering all individual efforts as mechanical and administrative, the first being only the result of unskilled and rudimentary labor, and the second the product of ability and knowledge due to skillful and adequate training for managerial and administrative employments, and obtained and acquired in competent and well-established centers of education.

The different callings in life represent different degrees of skill. One of these degrees is that of a clerk behind a counter; another is that of an accountant in his office; a third is represented by a manager of a concern, etc. A carpenter with his saw, a blacksmith with his tongs, and a mason with his trowel represent also various degrees of skill, but the economic results of each and every one of those special degrees depend evidently on the efficiency and proper training, where the superiority of skilled over unskilled labor must prevail. This fact has been demonstrated and proved by Mr. James M. Dodge in an address delivered in the United States on the "Money value of training."

The value of technical and skillful education can not be overestimated; it is incalculable both to the individual and to society in general, and it becomes a sort of propelling force toward the advancement and progress of any civilized country and State. An important business man once said: "I do not know where to turn to find a young man properly trained to come into my office who, by an appreciation of the problems which I have to face, can relieve me of a portion of responsibility."

And not only in the business world is this want of skilled training keenly felt. Governments and municipalities have ever and anon to face a series of perplexing economic and administrative problems of organization and management in which the counsel, advice, experience, activity, and labor of the skillful and trained expert become influential and valuable. And be it noted that in every case the employer and the employee are impelled by what may be termed a reciprocal interest; the former seeks the most efficient labor possible and will only pay according to the value and worth of the services given him; the latter simply offers what he knows or what he is capable of doing, his progress and prosperity depending only on his training and skill.

The conditions of efficiency are more universally considered and sought to-day than they were 25 years ago, and this fact is conclusive if we consider the following opinion of a recent writer who said: "The average young man of to-day, without a trained mind equipped with a previously acquired foundation of facts, is not in the narrow place to which division of labor assigns him in a position to grasp the breadth and depth of his business."

To summarize: Admitting the validity of the theme and theory which has been summarily outlined in the foregoing lines, the writer is of the opinion that a uniform course of commercial instruction for all the countries of the American Continent may be established in the different kinds of schools enumerated in sections a, b, and c of the proposition, under the following curricula which may conveniently be divided in a full course of three years, and for young men who have been previously prepared or who may have acquired beforehand a knowledge of the three "rs" or the benefits of a high-grade school.

Curricula: Grammar, languages, arithmetic, geography, accounting, bookkeeping, stenography, typewriting, economics, customhouse laws, port regulations, commercial law, shipping and transportation, correspondence, and history.

Each subject matter to be given the necessary scope and extension to obtain the desired end.

¿CÓMO PUEDE UNA NACIÓN PREPARAR DE LA MANERA MÁS EFECTIVA A SUS JÓVENES PARA UNA CARRERA COMERCIAL QUE DEBA EMPRENDESE BIEN SEA EN DICHA NACIÓN O EN UN PAÍS EXTRANJERO?

Por M. DELLEY,

Director de la Escuela de Comercio de Venezuela.

La prosperidad de un país se aprecia examinando el estado de su actividad comercial. Trabajar en desarrollar las relaciones comerciales es trabajar por el bienestar general, pues es por el comercio que las diferentes naciones pueden procurarse los recursos de otras. La primera base de esta prosperidad es la paz tanto nacional como internacional. Sin ella todo el comercio se paraliza y su gran instrumento, el crédito, desaparece, viniendo pronto las quiebras y las ruinas. Si la lucha por el predominio económico lleva los beneficios de la civilización a todas las partes de la tierra, trae, desgraciadamente, el terrible espectro de la guerra. ¿Será ahora más que nunca una utopía esperar, que después de las crueles lecciones que Europa está dando al mundo, a costa de ríos de sangre y de una miseria indecible, desaparezca el funesto espectro, las dificultades entre naciones se arreglen de otro modo que no sea el de las armas y que el comercio no sea interrumpido más por catástrofes como las que atravesamos? De todos modos al desastre europeo sucederá una larga era de reconstrucción, y la América Latina, por sus grandes riquezas naturales, por la apertura del Canal de Panamá está destinada a representar un papel importante en el nuevo desarrollo económico. La preparación es el secreto del triunfo en la guerra así como en las luchas pacíficas, y uno de los temas propuestos por el Segundo Congreso Científico Panamericano es el presente: "¿Cómo puede una nación preparar de la manera más efectiva a sus jóvenes para una carrera comercial que deba emprenderse bien sea en dicha nación o en un país extranjero?" el cual tiene una importancia transcendental.

En los medios que se ocupan de la instrucción comercial, el problema ha dado ya lugar a innumerables discusiones y controversias. Creemos útil estudiar rápidamente la cuestión desde los puntos de vista histórico y moderno:

A. Histórico.—La formación del aprendiz se hacía completamente en la casa de comercio. Teóricamente el joven debía empezar por lo sencillo y fácil para llegar a los procesos más difíciles y complicados que se presentan en los negocios; y debería tener oportunidad para perfeccionar sus conocimientos en el almacén, en las oficinas, en la venta, en la plaza o en los viajes.

Las grandes empresas y la división del trabajo hicieron la formación del aprendiz difícil e incompleta, necesitando una modificación esencial y así llegamos al sistema moderno de preparar jóvenes para la carrera comercial.

Estado actual de la enseñanza mercantil.—A la formación práctica del aprendiz se ha agregado la enseñanza profesional, que tiene por misión desarrollar la cultura general, y más particularmente la cultura especial del aprendiz. En algunos países especialmente en los germanos, se han dictado leyes reglamentando el aprendizaje conjuntamente con la enseñanza complementaria. Generalmente el joven hace un contrato con el jefe de la casa para su aprendizaje de tres años y durante este tiempo asiste a los cursos complementarios de comercio nocturnos; en algunas regiones estos cursos complementarios se dan de día, lo que es mucho más ventajoso por todos respectos. La materia enseñada en estos cursos comprende: Contabilidad, aritmética mercantil, correspondencia mercantil, derecho mercantil, geografía económica y un idioma extranjero. Al fin de los tres años el aprendiz presenta un examen teórico-práctico y se le concede un diploma. La mayor parte de los jóvenes que quieren dedicarse al comercio entran directamente en la práctica y completan su instrucción general y especial en cursos complementarios. Este hecho explica el gran desarrollo de estos cursos de los cuales existen en Alemania, 650; en Suiza, 110; en Inglaterra el número de clases es de 6,000 con asistencia de 250,000 alumnos.

Las dificultades crecientes del alto comercio debidas a la intensidad de la competencia y a la extensión de las relaciones exigieron una comprensión de la vida económica e internacional, y conocimientos que el joven comerciante, ocupado en la rutina diaria de la oficina, no tiene oportunidad de adquirir, y si la tuviera le faltaría la preparación adecuada para asimilárselos. De ahí la creación de escuelas de comercio, las cuales pueden dividirse en dos categorías: Escuelas prácticas de comercio y escuelas superiores de comercio. En las primeras se cursan, en un período de dos años, los conocimientos técnicos elementales, para jóvenes que después entrarán en aprendizaje; ellas disminuyen la duración del aprendizaje y proporcionan a sus alumnos una cultura general, más vasta que la que se puede obtener en cursos complementarios. Las escuelas superiores de comercio, con tres, cuatro o cinco años de estudio, desarrollan en sus alumnos una cultura general y técnica de una manera profundizada. Los alumnos que tienen diplomas de estas escuelas no hacen sino un aprendizaje corto y generalmente remunerado; ellos están destinados a formar buenos empleados, jefes y administradores de primera, futuros profesores de enseñanza mercantil y hombres que en la vida privada y pública prestarán servicios.

El papel cada vez más importante que desempeña el comerciante, el banquero y el industrial en los asuntos públicos, nacionales e internacionales exigen de ellos una cultura extensa de las ciencias económicas y jurídicas, y por esto además de la enseñanza comercial superior se han fundado academias de comercio, secciones y facultades comerciales, y universidades de comercio, instituciones todas que tienen un gran porvenir.

Para resumir esta parte del informe se puede hacer constar que existe la tendencia a terminar los estudios generales y comerciales antes del aprendizaje práctico, de hacer un aprendizaje corto y remunerado, siendo sólo una minoría los que completan la cultura general y profesional en universidades antes o después del aprendizaje. Según varios estudios sobre la materia, este modo de proceder parece dar el máximo de ventajas al jefe de la casa y al aprendiz.

Estado de la enseñanza mercantil en la América Latina.—Ya hemos delineado lo que se juzga el mejor plan de preparación para una carrera mercantil. La América Latina se inspira mucho, quizás demasiado, supuestas las diferencias de raza y de desarrollo político, económico y social, en lo que se hace en Europa. En la enseñanza ha sucedido lo mismo que en otras formas de organización; y así se ha visto fundar escuelas de comercio según el modelo de antiguas y reputadas escuelas europeas sin tener un resultado satisfactorio. Es preciso proceder por evolución y tomar en cuenta las condiciones del país; en muchos de ellos el gran problema es todavía la instrucción primaria y la organización de establecimientos superiores y especiales vendrá con las fuerzas de las cosas. Con todo, se ha trabajado ya mucho en pro de la enseñanza comercial. Creemos útil estudiar brevemente el estado actual de algunos de ellos.

México.—La enseñanza comercial está dividida en primaria y superior. La enseñanza primaria se da en dos años al fin de los cuales y después de exámenes se otorga el diploma de dependiente de comercio. La enseñanza superior está dividida en tres secciones: La primera después de tres años de estudio da el diploma de contador de comercio; la segunda, también después de tres años de estudio, concede el diploma de perito empleado de la administración pública; y la tercera, después de dos años de estudio, otorga el diploma de alumno consular. La edad de admisión en estas tres secciones es de 14 años. Los cursos se dan de enero a septiembre, de las 7 a las 9 de la mañana y de 5 a 8 de la noche.

República de Panamá.—Existe una sección comercial en el Instituto Nacional. El curso completo se da en dos años (cursos nocturnos) y se otorga un certificado de capacidad profesional; después de practicar dos años en el comercio se da el diploma de perito mercantil.

República del Salvador.—Existe una escuela de comercio organizada con programa de tres años (24 horas semanales) y a los alumnos que han pasado un año en el comercio y un año en la industria se concede un diploma de profesor de comercio y contador de hacienda.

República del Ecuador.—Existen cursos nocturnos de comercio organizados por la asociación de empleados.

República de Honduras.—La enseñanza de la contabilidad es introducida en el tercer año de las escuelas normales y en las escuelas secundarias se enseñan materias que tratan de comercio. Existe una escuela de comercio de tres años. En cada año se enseñan seis materias a razón de seis horas semanales. Al fin del tercer año se concede el diploma de perito mercantil.

Bolivia.—Además de escuelas de comercio privadas y fundadas por instituciones religiosas hay la escuela nacional de comercio que consta de tres secciones: (1) Curso preparatorio de comercio; (2) sección de facultad de ciencias comerciales (tres años) dividida en escuela de ciencias comerciales con diploma de contador y licenciado de comercio y sección administrativa, consular y aduanera; (3) escuela de comercio para niñas.

Chile.—El desarrollo de la enseñanza mercantil en este país ha sido notable: en 12 años se han abierto 12 escuelas de comercio con un programa de tres años. El Instituto Superior de Comercio tiene una sección especial para la formación de profesor de aritmética mercantil y contabilidad, y profesor de geografía y de estudios de mercaderías.

Argentina.—La enseñanza mercantil ha pasado ya a formar parte de los estudios universitarios y se confiere el título de doctor en ciencias comerciales.

Venezuela.—Se han fundado tres escuelas de comercio con programa de tres años.

Esta rápida revista muestra la gran variedad en la organización y en el progreso de la enseñanza mercantil.

Hemos dejado la cuestión del aprendizaje práctico porque no está organizado ni por la ley ni por las costumbres. En estos países tropicales el joven de 14 a 15 años adquiere ya conciencia de su individualidad y prefiere la libertad de la vida práctica a los esfuerzos que necesitan todos los estudios serios. Él entrará entonces, muy temprano, en una casa de comercio, casi sin formación intelectual, o si empieza estudios los dejará con frecuencia a mitad de camino. La mediocridad y una carrera sin placer y sin esperanza, es la consecuencia de esta falta de energía y de mala concepción del porvenir. Esta cuestión de estudios está sometida a la solidaridad de varios elementos inherentes al clima, al estado económico y a la familia. La mentalidad y las costumbres no hacen esperar una organización sistemática del aprendizaje y las escuelas de comercio tomarán por eso tanto más desarrollo e importancia.

En las escuelas que forman parte del sistema escolar público habría posibilidad de hacer efectivo un plan uniforme de instrucción comercial, en las escuelas denominadas escuelas superiores de comercio, dejando a las universidades sus caracteres autónomos,

su organización propia. Creemos, sin embargo, que la uniformidad encontraría numerosos adversarios, enemigos de la centralización. En Suiza se ha tratado de crear un programa mínimo y un diploma federal y esta iniciativa ha encontrado una fuerte resistencia. Si uniformar en un país tan pequeño como Suiza, es difícil, ¿qué será en un continente inmenso? América tendrá tal vez la ventaja de que apenas está empezando y que sería bastante fácil fundar escuelas de comercio de tipo uniforme. La conveniencia de uniformar estas escuelas se puede justificar por el hecho de que el diploma concedido sería más conocido y apreciado en el mundo comercial y facilitaría a su portador el procurarse una colocación. ¿Cuál será pues este tipo? A nuestro parecer las escuelas de comercio que dan los mayores resultados, considerando el número de alumnos que atraen y de los que continúan hasta el examen final y la suma de conocimientos, son las que tienen un programa de tres años y la edad de entrada de 14. De acuerdo con ese tipo habría también que uniformar el horario y nos permitimos proponer el siguiente tipo de programa:

HORARIO.

	Primer año.	Segundo año.	Tercer año.
	Horas.	Horas.	Horas.
Lengua nacional.....	4	2	2
Primera lengua extranjera.....	6	6	6
Segunda lengua extranjera.....	3	3	3
Aritmética y cálculo algebraico.....	3	3	3
Contabilidad y comercio.....	6	3	3
Ejercicios prácticos (monografías y oficina comercial).....		5	6
Complemento de la enseñanza profesional según las exigencias del comercio regional.....			2
Física y química.....	2	2	2
Estudios de mercancías.....			2
Geografía económica.....	1	2	2
Historia del comercio.....		1	1
Legislación comercial.....		1	1
Economía política y comercial.....		1	1
Mecanografía, estenografía y caligrafía.....	2	1	1
Total.....	27	30	30

A nuestro modo de pensar el carácter profesional está suficientemente acentuado en este programa y el número de horas semanales no es exagerado.

En las escuelas sostenidas por dotaciones particulares hay que conformarse generalmente a los deseos e instrucciones de los donadores y lo mismo para los establecimientos que se encuentren bajo administración particular, nos parece inútil trazar un esquema.

De igual modo que en Europa, en los principios de esta enseñanza especial, la gran dificultad es y será siempre por algunos años, conseguir profesores convenientemente preparados por largos estudios y por la práctica de los negocios. Los alumnos portadores de diplomas de las escuelas de comercio son las semillas de estos profesores y es esencial que los Gobiernos les proporcionen los medios necesarios para completar la preparación indispensable para el profesorado.

Debido a su iniciativa los antiguos alumnos de las escuelas de comercio pueden colaborar de una manera efectiva en la causa de la enseñanza comercial. Al terminar los estudios los compañeros de los años felices se separan para hacer frente a las realidades de la vida y sus relaciones en el porvenir no serán debidas sino a la casualidad. ¿No podrían ellos inspirarse en lo que han hecho los antiguos alumnos de las escuelas de comercio de Francia? Cada escuela forma una asociación especial y cada asociación está representada por tres miembros en el Consejo de la Federación. Esta federación que cuenta más de 7,000 miembros tiene por objeto en primer lugar asegurar la colocación de los antiguos alumnos; desde su fundación en 1892 ha procurado cerca de 2,000 colocaciones a sus miembros. A los principiantes sin recursos hace préstamos y ayuda a los que atraviesan por circunstancias difíciles. Tiene un servicio gratuito

de consultas jurídicas, y por su mediación sus miembros pueden hacer compras con ventajas apreciables. Por sus recepciones y banquetes suscita relaciones personales y las discusiones que se siguen a estas reuniones son verdaderos cursos de enseñanza mercantil. Ella publica una revista bi-mensual que da a conocer la vida de la unión y tiene a sus lectores al corriente de las cuestiones comerciales y económicas.

Si llevar a la práctica un curso uniforme de enseñanza mercantil es posible en los países americanos, tanto más lo será la federación o por lo menos las asociaciones nacionales.

Para terminar expresaremos los votos por que los trabajos del congreso conduzcan a la adopción: de un tipo de escuelas de comercio con plan uniforme; que los Gobiernos tomen las medidas necesarias para asegurar formación de los profesores de la enseñanza mercantil; que los antiguos alumnos formen una federación; que se publiquen textos modernos en lengua castellana; que se proporcione a los que entren en la práctica, sin pasar por la escuelas de comercio, la facilidad de completar su instrucción profesional en cursos nocturnos.

FORMA COMO UNA NACIÓN PUEDE PREPARAR DE LA MANERA MÁS EFICAZ A SUS JÓVENES PARA UNA CARRERA COMERCIAL QUE DEBA EMPRENDERSE EN DICHA NACIÓN O EN UN PAÍS EXTRANJERO.

Por FRANCISCO ARAYA BENNETT,

Director del Instituto Comercial de Valparaíso, Chile.

La América Latina no puede desentenderse de la situación que le crea a su comercio, la intervención preferente de los elementos extranjeros, en su vida económica. Mientras en Estados Unidos de Norte América, la vecindad de Europa, la extensión del territorio, la enorme masa de su población, la riqueza inagotable de su suelo y de su subsuelo, el libre cambio entre los Estados y el proteccionismo aduanero para toda la Unión, han permitido actuar de un modo perfectamente autónomo en la realización de los cambios, en la América Latina las industrias no han tenido elementos para luchar contra la concurrencia extranjera y, siendo extranjero el comercio de importación, se ha hecho extranjero también el de exportación de los productos nacionales.

Por regla general, en la América Latina el alto comercio, el que rige la parte más influyente de su actividad económica, se encuentra en manos extranjeras.

La enseñanza comercial de estas Repúblicas toma en consideración este hecho y escoge sus posiciones en vista de él.

En Chile, el joven que quiere dedicarse al comercio en una plaza mercantil como Valparaíso, por ejemplo, sabe perfectamente que debe dirigir sus aspiraciones hacia algún puesto de empleado en alguna casa inglesa, alemana, americana, italiana o francesa y pocas veces logra ingresar a un Banco chileno o a una empresa nacional.

Para ser admitido en una casa extranjera, lo primero que se exige es el conocimiento de idiomas modernos y, especialmente, el del inglés. Por eso, durante mucho tiempo, en Valparaíso, y, en general, en todo Chile, los jóvenes candidatos a la carrera comercial, se preparaban para ella en planteles ingleses particulares establecidos en el país; pero, muy luego, notaron que debían luchar con la competencia que les hacían los empleados extranjeros de esas mismas casas y que, para tener buen éxito, les era preciso intensificar más aún su preparación para la carrera comercial.

Desde las postrimerías del siglo último, la enseñanza comercial se ha vigorizado en Europa y su labor no ha pasado inadvertida en parte alguna. Este nuevo hecho ha contribuido para dar nueva orientación a la educación especial de los jóvenes que ahora se dedican a la carrera mercantil en esta parte de la América.

Durante mucho tiempo se había creído que el comerciante no se forma más que en el mostrador de una casa de negocios y que, para esa profesión, fuera de ciertas con-

diciones de carácter con que se nace y que no se aprenden jamás, los estudios no son más que un adorno. El comerciante de vocación, se decía, busca lo que necesita saber sin que nadie se lo enseñe y, aquél que no tiene esas aptitudes, con lecciones teóricas y prácticas de ciencias comerciales, no hace más que adquirir nuevos motivos de fracaso. Aparte de la profesión de comerciante, hay ciertos oficios comerciales que se aprenden, como: estenografía, teneduría de libros, dactilografía, etc. Se deseaba, por eso, que en vez de institutos comerciales, hubiera cursos sueltos de esos solos ramos. Los "business colleges" americanos han sido antes inspirados en este criterio y, sobre su modelo, han existido en todas partes, planteles particulares o cursos privados en que previa remuneración, generalmente subida, se han ofrecido esas lecciones, garantizando un aprendizaje rápido y ocupaciones lucrativas

En casi todas las materias, se puede afirmar que ha ocurrido lo propio y está ya lejano el tiempo en que se pudo confundir a la minería con el hallazgo más o menos casual de un tesoro. Si, por encima de la buena suerte del minero que diera con el filón de rico metal por excepcional capricho de la fortuna, ha surgido una serie de estudios merced a los cuales se logra un conocimiento exacto de la corteza terrestre y se doblega la tiranía de un destino voluble con la claridad liberadora del discernimiento, así, también, se reconoce, ahora, que no es tampoco el ejercicio del comercio, privilegio fatal de naturalezas maravillosamente dotadas y para las cuales no sea preciso la educación sistemática de un colegio profesional adecuado. Los hombres normales, con una enseñanza a propósito, pueden desarrollar aptitudes valiosas y alcanzar resultados satisfactorios en cualquiera esfera de actividad.

Todos reconocen ya que, más que el número de habitantes, significa para un país la calidad de los suyos. En todas partes se procura mejorar la educación pública y darle a los ciudadanos la mayor aptitud posible para conquistarse el propio bienestar y con él, el de la nación. Nadie ignora que los países que más progresan son, precisamente, aquellos que menos se confían a la rutina y que se empeñan en que se desenvuelvan ampliamente las energías que forman la riqueza y la fuerza nacionales.

Los modernos medios de locomoción han borrado las distancias y las modernas instituciones han dado otra significación a las fronteras, reuniendo toda la faz del planeta en un solo mercado, en el cual repercuten los acontecimientos que influyen en la economía de cualquiera nación, por apartada que aparezca en el mapa. El comercio, agente principal de la circulación de las riquezas por el mundo ahora unido y, sin embargo, también en constante y afanosa lucha de competencia, no ha podido menos que experimentar las transformaciones que crea este orden de cosas y la enseñanza comercial refleja mejor que nada esa transformación.

Sólo los países indolentes se conforman con entregarse a la explotación de agentes extranjeros, so pretexto de liberalidad de regímenes político-económicos. Los más activos y los que tienen fe en sus recursos y en el vigor de sus hijos, procuran sobreponerse a los yugos económicos, que no sujetan a los pueblos menos que las esclavitudes políticas. De esta guisa, la potencia productora de los países cultos, ha logrado cifras que hace pocos años se habrían creído fabulosas. El Imperio Británico, Estados Unidos, Alemania, Austria, Bélgica, Francia, Italia, lo mismo que muchos de los otros estados europeos, han forzado con esto su producción en tales términos que el mundo ha podido sentirse amedrentado con el espectro de la superproducción y han sido justamente los industriales de esos centros los que, como en Alemania, han proclamado, la necesidad de preparar especial y profundamente a los comerciantes, para que éstos descongestionen los centros de producción, abriendo con inteligencia y perseverancia aquellos mercados en que el imperio de la rutina ofrezca seguridades de buen éxito. Los pueblos de meras tradiciones mercantiles han notado los efectos de esa concurrencia sistemáticamente preparada y han tenido que armarse con la adopción de análogos elementos para la lucha económica y, de allí, que la enseñanza comercial haya logrado enseñorearse hasta en los recintos que le eran antes menos favorables, donde más se proclamara que el comerciante, como el poeta, "nace y no se hace" y que sólo surge al abrigo del mostrador.

La preparación de los comerciantes es un problema que tiene que encararse en la América Latina de un modo muy diverso que en Europa y que en los Estados Unidos. Cada una de nuestras naciones es principalmente productora de materias primas, de materias alimenticias o de materias apenas a medio manufacturar. Importan las mercaderías manufacturadas de aquellos centros en que se lucha contra la plétora de mercaderías y en que los fabricantes se disputan los mercados en forma asfuda. Despiertan a la vida económica, teniendo sobre sí una red muy espesa de agentes comerciales venidos de naciones muy ricas, muy potentes y muy bien armados para la lucha, tanto intelectual como pecuniariamente.

Algunas de estas naciones, todavía, han descuidado el estudio de sus intereses materiales, seducidas más bien por ideales de orden político, literario, religioso o científico. Han solido importar sus economistas, aprendiendo así como dogma de fe que es útil para ellas lo que han querido enseñarles profesores inspirados en los intereses de Francia o de alguna otra nación europea. Hace falta, por eso, empezar por el principio; esto es, por atender a la educación económica de la nación misma, desde sus universidades hasta sus escuelas primarias. La tendencia latina, heredada de España, que inclina a la juventud hacia el funcionarismo y hacia las profesiones literarias, hace más premiosa aún la necesidad de esa modificación del rumbo de la enseñanza pública.

Por las aspiraciones literarias y de abstractas aficiones artísticas, en países que todavía no son en gran parte más que campos casi vírgenes de colonización, y frente a clases populares poco educadas para la democracia, fácilmente cunde un ambiente de inquietud y de descontento que genera la revolución, la anarquía o el mal gobierno; por que se siembran malsanos hábitos de holganza e insensatas ansias de influencia personal en que medrar, con las cuales se da aliento al caudillaje y al despilfarro de los dineros públicos.

En cambio, una orientación de la enseñanza nacional que guarde armonía con las necesidades materiales de estos países, ha de crear en la sociedad intereses económicos vinculados al orden público y ha de infundir a la sociedad la noble fé en sus destinos que es la característica de los pueblos jóvenes, sanos y laboriosos que miran su porvenir sin zozobras.

Cada época tiene su modo de ser inconfundible, producto de sus necesidades y de sus ambiciones, revelada por el pensamiento de sus hombres de letras y por la índole de sus instituciones. La actual, gira alrededor de intereses económicos; es un abierto palenque en que luchan y triunfan los que están mejor dispuestos para obtener, con la riqueza, el bienestar y todos los beneficios de una civilización como la actual llena de exigencias materiales.

En todas partes, los partidos políticos encarnan ahora aspiraciones económicas y de clases sociales marcadas por la riqueza. Únicamente en algunas repúblicas latinas continúa una lucha que obedece a otra necesidad: a la de independizar a las instituciones democráticas de las absorciones de la teocracia que se aferra al espíritu de la colonia y que estorba la realización de otros ideales más en armonía con las necesidades de la época. En ellas, por ese motivo, se cree todavía que la enseñanza debe siempre estar impregnada del espíritu revolucionario de los enciclopedistas franceses. Pero donde quiera que impere una clase social ilustrada que haya contenido ese principio de disgregación republicana, se hace preciso encauzar las corrientes de educación por rumbos económicos bien definidos, que prestigien y hagan eficaces las iniciativas que se dediquen a las carreras industriales, agrícolas, mineras y comerciales, como querían en Chile, desde la independencia, los padres de la República.

Para ello, en la universidad, en vez de estudiarse sólo una economía política dogmática basada en libros extranjeros, sugeridos por las observaciones de otras condiciones sociales, debiera darse a conocer también la historia de las doctrinas económicas y alentarse el estudio de las propias condiciones nacionales; para lo cual ya en la segunda enseñanza la geografía y la historia comerciales merecerían ocupar parte del tiempo

que allí se consagra a la historia y a la geografía. Desde la universidad, asimismo, convendría que se estimularan los trabajos de investigación o encuestas referentes a las circunstancias particulares que miran a las fuentes productoras de la riqueza, a fin de llamar constantemente la atención de los que, por su posición y conocimientos, deben ser elementos directivos del país, sobre las necesidades propias del medio en que se hallan.

De igual manera, en la segunda enseñanza y lo mismo en la primaria, cuando ello sea posible, las materias que sirvan de base para las lecciones de cualquier ramo habrían de sacarse de aquellas que en el país y aún en la región sean más provechosas. Este método está recomendado por los principios más elementales de la ciencia de la educación, pero siempre es útil insistir en lo tocante a él, porque a su aplicación extendida y uniforme está vinculado el interés que puede despertarse en la juventud por actuar en otras esferas que las meramente literarias y especulativas.

En general, la América Latina carece de oportunidades para estudiar en común sus intereses y sus ideales. Toda ella tiene problemas comunes y cada una busca por su lado soluciones sin atender como debiera a los resultados obtenidos por las otras frente a iguales dificultades. En el campo educacional ellos son múltiples y difieren substancialmente de los que preocupan a los Estados Unidos. La tradición británica es muy distinta de la tradición ibera. Los hábitos democráticos ingleses no son iguales a las costumbres encarnadas en los pueblos por la herencia monárquica absolutista de la península, herencia vigorizada por la subsistencia de elementos étnicos desiguales, unos con el carácter de dominadores y otros con el de subyugados. La cuestión de los hombres de color de los Estados Unidos, no es la misma que la de estos pueblos en que se crea una nueva raza con mezcla de europeos y de indígenas, incorporados en forma más o menos completa a las ideas de la vida europea.

Las clases sociales de esta parte del continente suelen basarse en principios étnicos; pero, muy a menudo, los dominadores, familiarizados con los libros y revistas americanas y europeas, no abordan sus cuestiones domésticas con clara concepción de esta circunstancia y las resuelven como si la masa entera de su pueblo fuera igual a la del pueblo francés, inglés, suizo o del noreste de los Estados Unidos. Se haría impopular y pasaría por fatuamente aristócrata el que dijera que no es posible reunir siempre en un mismo plantel a los niños de diverso origen y hábitos. Esto, que no se puede decir, se hace, sin embargo, y se hace con toda la extensión que consienten los recursos de que se dispone. No obstante, se cierran los ojos ante estos hechos hasta para abordar los problemas de la educación femenina, más sensible a tales diferencias sociales de raza y de costumbres, y se han condenado los Liceos de señoritas, llegándose a proponer con prematura vehemencia la coeducación (de niños y niñas) en esa intermedia edad en que no defienden la pureza, la inocencia de la infancia ni la madurez de la edad adulta.

No es de extrañarse, por lo demás, este extravío del criterio, desde que él se observa en muchas otras esferas de la vida latinoamericana. Los raudales de ilustración que vacían sobre estas vírgenes comarcas los grandes centros de la moderna cultura, caen con tal ímpetu y se reciben con tan amplia avidez de progreso y de mejoramiento, que no siempre alcanzan las fuerzas para resistir el turbión y escoger de en medio del torrente lo que es útil y adaptable a nuestras necesidades.

Si los latinoamericanos pudiéramos, como los ciudadanos de los Estados Unidos, crear entre nosotros vínculos que nos permitieran hermanar nuestros esfuerzos frente a las necesidades que nos son comunes, sin duda, que esa selección de lo que importamos sería más completa. Aprenderíamos a conocer mejor nuestras propias peculiaridades y obtendríamos resultados más satisfactorios en nuestros ensayos.

La educación económica de estos pueblos sería de las primeras en aprovecharse de esa frecuencia de relaciones y, andando el tiempo, acaso no fuera tampoco una ilusión esperar que de ella naciera una liga aduanera, análoga a la que tan provechosa es para los diversos estados que forman la Unión Americana del Norte y a la que ha hecho la unidad y la grandeza de los estados alemanes.

La América del Sur ha sido colonizada desde las costas que la rodean y todavía existe en el centro un inmenso despoblado que nos pone a todos de espaldas y mirando hacia el mar. Esto contribuye tal vez a que nos conozcamos poco. Nos son más familiares las banderas de los navíos de ultramar que pasean ante nuestra vista y que nos traen las ideas y los usos de pueblos muy lejanos. Carecemos también de esa red de ferrocarriles con que se unen los Estados Unidos y nuestros ríos no suplen la falta, porque en unas partes no lo permite el relieve continental y en otras lo dificulta el clima. Sin embargo, en las últimas décadas y, principalmente, merced a la acción de los Estados Unidos, las conferencias panamericanas y congresos como el actual, han logrado que nos apercebáramos de que tenemos otros hermanos en la vecindad y nos permiten ahora que, sin incurrir en grave descortesía para con la gran nación que nos congrega, podamos estudiarnos y reconocernos como ligados por un parentesco más estrecho y por una herencia común aún indivisa y sin probabilidades de liquidarse en corto plazo.

El hallarnos juntos por especial invitación de los Estados Unidos, no nos obliga a considerar nuestra situación como igual a la de esa gran República. Esto sería inexacto. En cambio, esta Asamblea nos impone el estudio del ejemplo de lo que esa otra Unión de estados ingleses significa para nosotros, que no sólo estamos separados sino que tenemos en común muy pocas relaciones efectivas.

La creación de una Universidad Comercial Latinoamericana o, por lo menos, la reunión periódica de congresos latino americanos de enseñanza comercial, podría ser uno de los frutos más valiosos de esta asamblea y de los que más contribuyeran a crear entre nosotros lazos eficaces de confraternidad y de provecho común. Cualquiera de estas dos proposiciones asimismo, llevaría tal vez mejor que nada, a resolver de un modo definitivo la cuestión propuesta por el tema que nos ocupa, enunciado por la comisión ejecutiva del congreso.

Las circunstancias en que opera el comercio de los Estados Unidos hacen que éstos exijan para la educación comercial de sus hijos medios muy diversos de los que requieren nuestros hombres de negocios, latinoamericanos. Nuestros países, productores de materias primas o a medio manufacturar, tienen otras necesidades y, correspondientes a ellas, deben ser otras las aspiraciones y otros los elementos de estudio.

Los oficios comerciales de estenógrafos, dactilógrafos, tenedores de libros y escribientes de las oficinas, pueden ser igualmente formados en cualquiera parte. Pero no ocurre lo propio, cuando se trata de preparar a los jefes de empresas y a los que han de actuar como elementos directivos de nuestros intereses más valiosos.

El alto comercio latinoamericano, como se ha dicho, está en manos extranjeras en su mayor parte y, por consiguiente, él no se forma en nuestro suelo. Sería prematuro y estéril así, que cualquiera de estas Repúblicas separadamente tratara de formar una universidad comercial con tal objeto; pero, en común, todas podrían sostener un centro de investigaciones económicas y comerciales, destinado a dilucidar los problemas que más interesan a su desarrollo económico, comercial y financiero y a formar a los asesores técnicos comerciales de los gobiernos, cámaras de comercio y consulados. La política comercial, la legislación comercial y los diversos temas relacionados con el fomento de la riqueza y del poder económico de la América Latina, adquirirían así un órgano que, para esta sección de la América, podría significar mucho más que lo que importa para los progresos agrícolas generales el Instituto Internacional de Agricultura creado en Roma en 1906, por iniciativa del Rey de Italia y con el apoyo de los principales gobiernos del mundo civilizado.

En lo tocante a la enseñanza comercial secundaria, creemos que la acción particular de cada estado es fácil; mientras tanto, tratándose de la universitaria nos parece que, separadamente, ninguna de estas repúblicas puede establecerla y todas la necesitan.

El comercio es, a la vez, lazo de unión y palenque de competencia, y, si bien suele ser engañoso su lenguaje frente a los que, siendo extraños a él, lo utilizan, acostumbra

a expresarse con claridad en sus tratos con sus colegas. Apreciamos en todo lo que valen los beneficios del comercio extranjero y de la afluencia a un país de capitales extranjeros; pero, a la vez, creemos que cada pueblo debe prepararse para constituir su propia riqueza y para no quedar siempre reducido al papel de colonia comercial de fácil y de provechosa explotación por parte de otros pueblos más potentes y más aptos para obtener ventajas comerciales. Los países latinoamericanos, en materia de desarrollo económico, estamos más o menos en el mismo grado. No somos, generalmente, competidores los unos de los otros. Para todos, la Europa y los Estados Unidos son los grandes mercados de aprovisionamiento, quienes nos reciben con protectora benevolencia como a clientes fáciles y nos pagan nuestros productos naturales con aquella equidad y largueza que somos capaces de arrancarles en nuestra primitiva concepción de los negocios. De vez en cuando suele acontecernos que volvamos del mercado con extrañas novedades que nos cogen de sorpresa y nos sumergen en confusión: tal producto natural en que cifráramos esperanzas, se ha substituido por una nueva combinación química; otro que vendemos a muy bajo precio, logra uno muy alto en el mercado y no circula como debiera, por que es objeto de la especulación de un sindicato del que no sabemos defendernos. Esos valiosos capitales que nos rodean, nos favorecen; pero no a título gratuito y lo pagaremos tanto más caro cuanto menos instruidos estemos nosotros en lo que se relaciona con el mecanismo complicado y difícil del comercio moderno.

Estados Unidos y la Europa, para nosotros están en el mismo plano, en lo que toca al comercio. Nosotros, los latinoamericanos, necesitamos profundizar el estudio de nuestros intereses desde el punto de vista nuestro, de productores de materias primas o de mercaderías naturales muy poco elaboradas. La parte de la tecnología que nos interesa es otra que la que conviene a los Estados Unidos y lo mismo nos ocurre en lo que mira a las proyecciones económicas. En la Universidad de Chile existe la cátedra del salitre y como ésta, los países latinoamericanos debemos conocer la tecnología de los productos tropicales y de las diversas materias que prodiga nuestro suelo; pero no tanto desde el punto de vista de las últimas aplicaciones de esos productos, como desde el de sus primeros arreglos al salir de la naturaleza y hasta que se le entrega al comercio extranjero.

En el orden económico, una universidad comercial miraría, principalmente, a los fines que debiera perseguir la política comercial y a preparar, con tal objeto, a los elementos directivos de nuestra economía. En ella, los estudios económicos no serían meras abstracciones, sino verdaderos trabajos de útil investigación económica aplicada a nuestra América.

Con sesenta y ocho millones de habitantes y con una riqueza colosal, Alemania tiene 429 escuelas de comercio y de ellas sólo seis son universidades; las de Berlín, Leipzig, Francfort sobre el Maine, Aquisgran, Colonia y Hamburgo. En Europa son contadas las universidades de este carácter, aunque son muchas las escuelas que pretenden alcanzarlo. Mejor sería todavía que siguiéramos careciendo de este centro intelectual a que constituyéramos muchas pretenciosas escuelas con el nombre pomposo de universidades comerciales. La talla de los profesores, lo mismo que la calidad de los alumnos, deben medirse con exacta medida, para poder mantener una Universidad dentro de la atmósfera en que debe subsistir, y no es posible contar con unos y con otros en número y en calidad adecuados, sin una cooperación eficaz de todas estas repúblicas.

La enseñanza secundaria del comercio no ofrece mayores dificultades. Los modelos que pueden seguirse se hallan muy repartidos y nunca es difícil encontrar para ella, ni los alumnos ni los profesores que ha menester.

El fin que persigue esta enseñanza no es más que el de una escuela profesional: formar un comerciante o un empleado útil del comercio, que sea capaz más tarde de llegar a ser un hombre de negocios, independiente.

Para estas escuelas se proponen dos planes: unos quieren que el futuro comerciante o empleado haga sus estudios generales en un colegio cualquiera y que vaya más tarde a una escuela práctica a estudiar el oficio que quiera seguir, por ejemplo: estenografía, escritura a máquina y rutina de oficina, para ser secretario comercial; teneduría de libros y cálculos mercantiles, para ser contador; operaciones de bolsa y banca o tramitación aduanera y conocimiento de mercaderías, para otros oficios.

El otro plan es el que siguen los colegios comerciales alemanes, italianos, austriacos y franceses de segunda enseñanza comercial. Toman al niño en edad temprana y, junto con comunicarle los conocimientos generales que ha menester hoy todo hombre civilizado, se le inculcan ramos de enseñanza comercial que han de permitirle actuar provechosamente en el comercio.

Este segundo sistema es el que mantiene el Gobierno de Chile en sus escuelas comerciales, y se le reconocen las siguientes ventajas: abrevia la vida escolar, con lo cual el joven sale a los 15 ó 16 años en condiciones de ser un magnífico junior, muy bien aceptado por el comercio. Reduciendo la vida escolar, el niño entra al comercio en condiciones de aprender la rutina de las oficinas y de amoldar sus hábitos a las exigencias de las casas comerciales. Al mismo tiempo, llega en condiciones de poder escoger una especialidad comercial para desarrollar sus conocimientos posteriores en vista de los propósitos que persiga dentro de la vida mercantil.

En general, nuestros niños latinos son más precoces que los del norte de Europa y, cuando entran jóvenes al comercio extranjero, sus jefes les dispensan mayores simpatías y logran merecer una confianza que no conceden a menudo a los nativos. De esta suerte, si los niños llevan buena base de conocimientos generales y comerciales, andando el tiempo pueden lograr que sobre ellos caiga la elección de los reemplazantes, cuando los jefes extranjeros traten de retirarse de los negocios. Así, poco a poco, puede sembrarse aún dentro del comercio extranjero, la semilla de nuestro propio comercio nacional.

Tiene aún este sistema otra ventaja. La escuela comercial completa y atractiva, se graba en la memoria del comerciante que en ella se formó, y, una vez que es padre de familia, envía allí a sus hijos, manteniendo así para la carrera comercial y para continuar la actividad de las generaciones anteriores a las que se forman a las que, al amparo de padres ya comerciantes, y que, por esto pueden tener mayores probabilidades de buen éxito.

El otro sistema, el de las escuelas meramente prácticas, donde no se enseñan sino ramos sueltos de aplicación inmediata, es muy conocido en los Estados Unidos, es el de la gran mayoría de los "business colleges" y se halla extendido en toda la tierra con los caracteres de institutos particulares. Los que esperaban ser alumnos universitarios y no pueden seguir sus estudios, buscan una habilidad para consagrarse a ella, constituyéndose un medio de vida. Los cursos nocturnos del Instituto Comercial de Valparaíso tenían ese fin. Pueden formarse también con ese carácter escuelas de perfeccionamiento (Fortbildungsschule), a fin de contribuir a que los alumnos salidos de las escuelas comerciales puedan completar alguna especialidad, como estenografía, dactilografía, teneduría de libros, etc.

El plan que nos parece más oportuno para una escuela comercial de segunda enseñanza es el que esbozábamos en los siguientes términos al asumir la Dirección del Instituto Comercial de Valparaíso, en 1908:

La idea dominante de la reforma, consiste: en la reducción y mejor aprovechamiento de la vida escolar de los jóvenes que desean consagrarse al comercio.

Una preocupación muy arraigada entre los que se ocupan de la enseñanza humanista ha logrado invadir la esfera de acción de la enseñanza comercial y ha desacreditado algunos ramos que tienen honroso lugar en estas escuelas.

Para enseñar ramos de enseñanza general están los liceos, se dice, los institutos de comercio deben tomar niños que tengan sus estudios humanistas y proporcionarles únicamente las asignaturas de valor profesional. Los tales institutos, se llega a afirmar, no son más que liceos, en que los ramos de enseñanza general, se disfrazan con un nombre, con un agregado, que no altera su significación, con la palabra comer-

cial. Exíjase el tercer año de humanidades, se agrega, como conclusión, y entonces los institutos quedarán reducidos a un año de estudios de una verdadera escuela práctica de comercio.

La ciencia, estudiada desde el gabinete, no es sino una sola, sea quien quiera el que la estudie; pero difiere mucho, desde el punto de vista de las necesidades que cada uno tiene de ella. Lo mismo es la aritmética en Chile que en Bélgica; pero es muy diversa la que profundiza el ingeniero, que la que a diario aplica el comerciante. Aquél, resuelve problemas oscuros con una precisión que nada olvida; éste, en cambio, se contenta con aproximaciones imperfectas, pero a que llega con presteza. La extrema exactitud no vale para él lo que una pronta previsión de resultados, concebida con destreza, en medio del rápido diálogo de una negociación. A primera vista, el futuro ingeniero de un liceo y el pequeñuelo de una escuela comercial estudian la misma aritmética; pero, en el fondo; qué distintos resultados persiguen y cuán diversas aptitudes educan! Para el uno, valen sobre todo los razonamientos que llevan el análisis de las operaciones a sus últimos elementos, a fin de que les sea posible corregir los errores más insignificantes y resolver las cuestiones más intrincadas. Para el otro, sobre todo, son útiles unas cuantas operaciones, muy pocas, las que más frecuentemente le salen al paso, pero que necesita dominar casi mecánicamente, de un modo tan seguro y espontáneo, que se creyeran resueltas por los labios sin haber alcanzado a pasar por el cerebro. La base de las dos aritméticas, es una sola; pero la manera de utilizarla, desde su primera noción, debe ser tan extremadamente opuesta, que bien valen las dos como disciplinas diversas del espíritu infantil.

Con escasas excepciones, el comerciante y el doctor universitario necesitan los mismos ramos de estudios generales; pero con orientación tan distinta que sólo un observador muy superficial puede confundirlos y empeñarse en someterlos a la autoridad simultánea de un solo maestro, y aun, de una misma escuela.

Nadie ha sostenido hasta ahora, que los estudios de la Escuela Militar o de la Escuela Naval, deben limitarse a los ramos meramente militares o náuticos. Se sabe que, junto con la instrucción, existe la educación militar y naval. El militar y el marino deben desplegar las cualidades morales e intelectuales que son características en estos profesionales y que les comunica una fisonomía especial, entre las personas cultas en medio de las cuales han de actuar. Mientras completan sus estudios generales, avanzan, de estos conocimientos, aquellos que les son más útiles; empiezan algunas asignaturas de alcance profesional, y sobre todo, se infiltran del espíritu militar, en un plantel en que todo prepara en ellos la vocación para su futura carrera. El carácter profesional no se enseña en una cátedra: es el producto de un conjunto de pequeños detalles que, aisladamente, parecen y son, en efecto, verdaderas puerilidades; pero que, en el fondo, encierran un gran significado educacional, como que constituyen un medio ambiente que fija rumbo a muchas existencias.

El injerto brusco de tres o cuatro ramos comerciales en un niño habituado a los estudios especulativos de un liceo, no es más que la negación de estas verdades, y se explica así el fracaso de todos los cursos prácticos de esa clase de planteles. El ambiente se hace pesado allí para los que no aspiran al título pomposo de la universidad. Pertenecer al curso comercial es casi una afrenta, y por consiguiente, en el cerebro infantil se presenta éste con los mismos odiosos atributos de las clásicas salas de castigo. Se enseñan ramos comerciales; pero no se educan comerciantes; no se procura despertar el amor a esta profesión; no se estimula el desarrollo de las aptitudes que en dicha carrera son valiosas; no se trasmite, en fin, esa materia impalpable que se llama "espíritu comercial," que no puede ser objeto de una asignatura; pero que debe emanar de toda buena escuela de comercio.

Ahora bien, una de las primeras cosas que sabe todo profesor de enseñanza comercial es que no educa sus alumnos para el pensamiento, sino para la acción, y que el peor enemigo de la actividad es la prolongación de la vida estudiantil, ociosa por naturaleza. Los millonarios americanos se complacen en burlarse de sus antiguos competidores cargados de libros, que no han sabido alzarse de un modesto pasar; mientras ellos, ocupados en barrer el almacén al principio de su carrera, se sientan, al fin, más poderosos y fuertes que muchos monarcas. En efecto, el estudio desinteresado de la ciencia, en la abstracta república de la escuela, eleva las aspiraciones, aristocratiza, por decirlo así, los pensamientos, hace avergonzarse del trabajo corporal y reduce las energías que son más eficaces en la lucha de la existencia y en la conquista de la fortuna.

El joven de escasos recursos que haya estado hasta el tercer año en un liceo, que frecuente después un instituto comercial, por uno, dos o tres años, y que vea llegar así sus 20 años sin haberse preocupado de ganarse el pan, no va a conformarse, por cierto, con un modesto negocio en que, con el tiempo, podría ser rico, pero que, desde luego, le impone la obligación de economizar un mozo que barra por él el almacén. Preferirá un empleo administrativo, una plaza de oficinista, cualquiera de esos azares en que se oculta y desarrolla la miseria de las personas decentes.

En Valparaíso estas consideraciones se imponen con mayor rigor, por una circunstancia sobradamente conocida. El personal directivo y gran parte del personal subalterno del comercio, viene del extranjero. Los nacionales que tienen colocación allí no son los que disfrutan de más sonoros títulos y de más ambiciosas pretensiones; sino, al revés, los modestos, los jóvenes, los que no han aprendido todavía a avergonzarse por llevar un paquete y a sublevarse por un reproche justo.

Me ha parecido, por eso, que los cursos diurnos del instituto, no sólo no debían basarse en el tercer año de humanidades, sino empeñarse en reemplazar esos tres primeros años, con estudios en que se encuentren las materias útiles de ellos y aquellas otras asignaturas que dan productividad a la acción de un junior del comercio. Estimo que no son de desear, por el momento, alumnos que permanezcan en el colegio hasta los 20 años de edad; creo que son preferibles niños que a los 15 o a los 16 años puedan abrirse camino como buenos dependientes del comercio importador.

Al efecto, se ha atribuido al inglés toda la importancia que le corresponde. Desde luego, en todos los cursos se le asignan seis horas semanales, y si la experiencia señala como insuficiente dicho tiempo, se solicitará que aumenten a 9 o 10 el número de horas. El segundo jefe y uno de los profesores jefes, que residen constantemente en el instituto, tienen el inglés como su idioma nativo, y casi todo el personal chileno del establecimiento posee también y estimula el uso de ese idioma. Las sentencias que se emplean en las clases de caligrafía, dactilografía y taquigrafía son inglesas, y aun, se procurará que de los textos de enseñanza de los últimos años se adopten de preferencia los que estén en ese idioma.

La escritura a mano, a máquina y abreviada se atenderá con esmero, lo mismo que la redacción en español de correspondencia y documentos comerciales, a fin de que el conocimiento del inglés, unido al del idioma nacional, haga que los jóvenes educados aquí tengan una positiva ventaja sobre los *clerks* traídos de Inglaterra.

Los cálculos abreviados del comercio, las operaciones mercantiles, la geografía comercial, la teneduría de libros, algunas nociones económicas, el estudio de las mercaderías y los ejercicios de la oficina de práctica comercial, forman, en seguida, un conjunto que, dadas las condiciones de nuestra juventud, ha de permitir a ésta asegurarse el éxito en la carrera comercial, una vez que la experiencia y el crédito lo eleven desde el papel de simple oficinista hasta el rango de jefe o de comerciante en la plenitud de su independencia profesional.

La historia patria, las nociones elementales de derecho comercial y de la tramitación de aduanas, el alemán y la higiene, completan el cuadro, sin recargar los estudios.

Es sensible que las condiciones del edificio no consientan una clase de gimnasia, que es indispensable para estimular el desarrollo físico de los alumnos; pero, hasta donde sea posible, se procurará suplir esta falta con juegos al aire libre y excursiones, para lo cual se deja libre la tarde del sábado.¹

Una escuela comercial, a mi juicio, no puede ser una academia fría, para enseñar dos o tres ramos, sino un centro de educación, en que se atienda al progreso moral e intelectual de los jóvenes que han de conquistarse una posición, en una plaza que dominan los capitales y el personal de un comercio que arranca de países de una cultura y de una elevación moral que justifica plenamente su influencia.

LA ASOCIACIÓN BIBLIOGRÁFICA PANAMERICANA POR MEDIO DE LA UNIÓN PANAMERICANA DE BIBLIOTECAS NACIONALES.

Por CARLOS SILVA CRUZ,

Director de la Biblioteca Nacional de Santiago de Chile.

Las dificultades de comunicación entre los diversos países de América han mantenido entre ellos, durante todo el siglo XIX, verdaderas murallas chinas que los aislaban unos de otros en todo lo concerniente a la vida espiritual. Sus fuentes de inspiración estaban más allá de los mares. Sus fuentes de información, en todo lo intelectual—sobre todo las de los países latinos—estaban principalmente en España y en Francia, y más en Francia que en España. La mayor parte de las personas ilustradas que en Chile conocen algo de los Estados Unidos, de su mentalidad, de sus

¹ Actualmente se han suplido esas deficiencias y la educación física, lo mismo que el dibujo y los trabajos manuales, tienen la extensión que es posible concederles y que se espera ampliar y completar con el canto. Nos proponemos que la enseñanza sea completa y armónico el desarrollo de todas las facultades infantiles.

modalidades psicológicas, lo conocen a través de los libros europeos y, en consecuencia, a través del criterio europeo. Las descripciones, casi siempre fantásticas, las impresiones rápidas y superficiales de los turistas que del otro lado del Atlántico vienen a visitarnos, son, en general, los anteojos con que los pueblos de América nos miramos los unos a los otros.

Facilitadas en grado notable las comunicaciones, en el último tiempo, por los ferrocarriles internacionales y las nuevas vías marítimas, esas murallas chinas se han mantenido, sin embargo, en toda su solidez, porque contribuyen a mantenerlas, de un lado, la tradición y la costumbre, y del otro, la falta de información bibliográfica mutua y permanente, la falta de organización del comercio panamericano de libros y la falta de relaciones directas entre los autores, los editores, los libreros y las bibliotecas públicas de los diversos países de América.

Todo esfuerzo tendiente a remediar esta situación será una gran obra panamericana, porque el acercamiento comercial y político, para ser sólido y mutuamente provechoso, requiere, como condición previa, el acercamiento espiritual; y éste sólo se obtiene por el conocimiento mutuo y por la comprensión recíproca.

Los esfuerzos que en pro de este conocimiento mutuo realizan los viajeros, los conferencistas, las visitas recíprocas de profesores y los mismos congresos internacionales, siendo muy meritorios y muy eficaces, cada uno en su momento respectivo, no bastan, sin embargo, porque carecen de continuidad. La única obra permanente, lenta pero segura, es la que podrían realizar los órganos de publicidad—libros, periódicos y revistas—que son el exponente constante de la mentalidad y de la actividad de cada país. Ellos podrían llevar día a día, de un extremo al otro del continente, las vibraciones diarias del pensamiento y del sentimiento de los pueblos que lo habitan; y ellos podrían llegar a hacer del panamericanismo, no una palabra fría, sino una realidad palpitante.

Desgraciadamente, es un hecho innegable que, en materias intelectuales, los pueblos americanos estamos aun más distanciados, unos de otros, que en todos los demás órdenes de actividad.

Este hecho, que está en la conciencia de cuantos en América se ocupan de leer, de estudiar o de observar la vida de los pueblos del continente, es confirmado de un modo matemático por las cifras estadísticas.

El total de la lectura en la sala central de la Biblioteca Nacional de Chile durante el año 1912 (primero en que se hizo estadística por nacionalidades) fué de 47,311 piezas diversas, entre libros, folletos, revistas y periódicos.

Descompuesta por nacionalidades, esta cifra da 20,618 piezas para la literatura nacional y 26,693 para las extranjeras; y de estas últimas, 11,366 para la literatura francesa; 9,160 para la española; y sólo 1,396 para todas las americanas reunidas.

O sea que, de las obras extranjeras leídas por el público de Santiago en su biblioteca principal durante el año, 43 por ciento eran francesas 34 por ciento españolas y sólo 5 por ciento americanas.

De cada cien lectores, sólo cinco pidieron libros nacidos en los países de América; o, puesto en otros términos, se leyó sólo un libro americano por cada seis españoles y por cada siete franceses.

En los años siguientes, las cifras estadísticas ofrecen resultados análogos.

En 1913, el total de consultas en el salón central fué de 68,612, de las cuales 33,034 fueron de impresos chilenos y 35,578 de impresos extranjeros. Y, de estos últimos, 15,191 fueron obras francesas, 12,166 españolas y 2,305 americanas. La literatura francesa estuvo, pues, representada por un 42 por ciento de la lectura extranjera; la literatura española por un 34 por ciento y las americanas por un 6 por ciento; o sea, un libro americano por cada seis españoles y por cada siete franceses.

En 1914, el total fué de 126,704 impresos, de los cuales 52,356 chilenos y 73,348 extranjeros. La literatura francesa tuvo 28,910 obras leídas, o sea un 36 por ciento del total de extranjeras; la española 23,820, o sea un 31 por ciento; y las americanas

7,781, o sea un 10 por ciento; lo que significa un libro americano por cada tres españoles y por cada cuatro franceses.

La pequeña reacción que se nota en 1914 ha sido debida, sin duda, a la propaganda organizada en la biblioteca misma, cuyo sección de informaciones y cuya revista de bibliografía han hecho, en el último tiempo, lo posible para dar a conocer entre nosotros las literaturas americanas, en la pequeña medida en que esta obra magna puede ser llevada a cabo por los esfuerzos aislados de una sola biblioteca.

Las cifras citadas son un indicio bastante seguro de la atención que presta el lector corriente, en Chile, a la producción intelectual de cada uno de los países extranjeros; revelan su conocimiento de las diversas literaturas; e indican el estado actual de sus relaciones con los diversos focos de la producción mental.

Este hecho lamentable, comprobado con la elocuencia de los números, respecto de Chile, por su Biblioteca Nacional, ¿es común a los demás países de América?

Todo induce a creer que sí, porque él proviene de causas educacionales atávicas, de tradiciones seculares hondas y arraigadas, que hacen a los países de América mirar, en materias culturales, como en el orden comercial y financiero, mucho más a los países de Europa que a sus vecinos del mismo continente.

Sería deseable, sin embargo, tanto para comprobar la efectividad del hecho, como para apreciar su alcance y conocer sus detalles, que todas las demás bibliotecas públicas de América llevaran una estadística semejante y que sus resultados se publicaran o se dieran a conocer mutuamente, por medio de la asociación que más adelante propongo.

También sería deseable una investigación entre los libreros, para conocer la tendencia de la lectura en el numeroso público que no acude a las bibliotecas, sino que compra los libros que lee. Esta investigación estaría en cada país a cargo de la respectiva Biblioteca Nacional.

Investigaciones bibliográficas de esta índole son corrientes en algunos países. Hace algún tiempo, practicó una de esta especie la Legación Japonesa en Chile, por encargo del Ministerio de Instrucción Pública del Imperio. Y, en América, ellas se imponen, si queremos llegar a medir con alguna exactitud el mayor o menor grado de solidaridad espiritual que une entre sí a los pueblos del continente.

Al lado de estos hechos, comprobables por la estadística, hay otros cuya existencia evidente es un axioma para todos aquellos que en América se ocupan algo en materias intelectuales.

Si un autor publica, en cualquiera de las ciudades de Estados Unidos, una obra cuyo tema exceda un poco las proporciones de una materia meramente local, sabe que le será muy fácil hacerla circular por todo el país y contar, como mercados de venta, con los 48 Estados de la Unión y sus colonias, es decir, con una área en cuyo recinto viven 100 millones de individuos que hablan el idioma en que está escrita la obra—el inglés.

Pero si un autor da a luz en cualquiera de las ciudades de la América Latina una obra de importancia y de interés general, sabe, por el contrario, que le será materialmente imposible hacerla circular con alguna amplitud fuera de su propio país y que sólo con éste podrá contar como mercado de venta; es decir, con un territorio sobre el cual se hallarán esparcidos, a lo sumo, 2, 4, 6 millones de habitantes.

A igualdad de interés e importancia de la obra, si el primero puede tirar 30, 40 o 50 mil ejemplares, el segundo apenas podrá imprimir 2 o 3 mil.

Y, sin embargo, los países americanos de habla similar y mutuamente inteligible (castellano y portugués) ocupan una área habitada por 70 millones de individuos, área que, con una buena organización, podría dar a los autores un mercado suficiente para lanzar ediciones de 15 o 20 mil ejemplares, en lugar de 2 o 3 mil.

Pongámonos ahora en el caso del investigador. ¡Cuántas dificultades, cuántas tribulaciones para saber siquiera qué se ha publicado en los demás países del continente sobre la materia de sus estudios!

Las bibliografías especiales, aun en lo reciente, brillan, en América, por su ausencia; y, si existen, es imposible obtenerlas en un momento dado. Ni siquiera se sabe a quién pedir las.

Aun la documentación oficial—en materias de legislación, de jurisprudencia, de organización y funcionamiento de las instituciones, de estadística y de movimiento administrativo, comercial e industrial—es escasísima en cada país respecto de los demás, sin excluir los límites.

En general, puede decirse que el único medio práctico de documentarse, para cualquier estudio que diga relación con los diversos países de América, es, tal como hoy están las cosas, un viaje personal; cosa que casi nunca está al alcance de los investigadores.

Lo mismo que he dicho de los autores y de los investigadores puede afirmarse respecto del lector corriente, el cual, en nuestros países, tiene toda clase de facilidades para obtener los libros europeos, aun los más insignificantes, y tropieza con todo género de dificultades cuando desea adquirir o leer libros americanos, aun los más importantes en su género.

Puedo afirmar, con pleno conocimiento de causa, después de innumerables conversaciones y con la experiencia que da el puesto que ocupo en la Biblioteca Nacional, que en Chile se conoce mucho menos el movimiento científico, literario o artístico de la República Argentina (país con el cual tiene el nuestro 2,400 millas de frontera común) que el de cualquier país europeo de alguna importancia. Igual cosa puedo afirmar, con idéntica experiencia personal, respecto del conocimiento que tiene la gente ilustrada, en Chile, de la ciencia, la literatura y el arte norteamericanos.

Pero este desconocimiento es mutuo, y en él estamos bien pagados. Esto puedo también afirmarlo con experiencia personal, adquirida en Buenos Aires durante el Congreso Científico de 1910 y en Estados Unidos durante la Exposición Panamericana de Buffalo, donde, para la casi totalidad de los visitantes de nuestro pabellón, fué una verdadera sorpresa que en él exhibiéramos, no sólo salitre y minerales, sino también pinturas, esculturas y libros.

Creo no equivocarme al pensar que igual experiencia e igual convicción pueden aportar la mayor parte de los delegados a este Congreso.

Esta situación requiere pronto y activo remedio, si se desea sinceramente formar el espíritu y el sentimiento panamericanos, única base sólida y durable para todas las vinculaciones continentales. Y las instituciones que, a mi juicio, están más en aptitud para tentar un esfuerzo eficiente en este sentido, son las bibliotecas nacionales de los diversos países de América, unidas en una acción común y orgánica permanente.

La Biblioteca nacional de cada República americana es, en virtud de la tradición y de las disposiciones de las leyes de imprenta y de propiedad literaria, el depósito obligado de la producción escrita de todo el país; en sus estanterías van quedando registradas, día a día, todas las manifestaciones de la actividad nacional; y ella puede convertirse en el mejor exponente, en el agente más eficaz para el conocimiento de esa actividad en el extranjero, con sólo reflejar hacia afuera lo que en su interior va quedando diariamente archivado.

La Biblioteca nuestra, por ejemplo, guarda en su sección de manuscritos casi toda la documentación histórica del país referente a su época colonial, al período de la emancipación y a una gran parte de su vida independiente; muchos de los más conocidos investigadores y publicistas del país han dejado en ella su documentación privada; en su sección de impresos chilenos están todos los libros y folletos publicados en el país, y la colección completa de todos los diarios, periódicos y revistas, desde el primer número de cada uno; en su "depósito legal" y en su "registro de propiedad literaria y artística" sigue recibiendo día a día, no sólo esos libros, folletos y publicaciones periódicas, sino también la música grabada en el país, los mapas y planos y las reproducciones de las pinturas, esculturas y demás obras de arte que en él se producen; en virtud de esas disposiciones legales y de la necesidad de aumentar sus

colecciones, está en constante relación con los libreros, editores e impresores de toda la República, y sus canjes la ponen en contacto con las más importantes universidades y bibliotecas del extranjero; su revista de bibliografía y su sección de informaciones la relacionan constantemente con los autores y con los hombres de estudio y los aficionados a la lectura; tienen en ella su hogar numerosas academias y sociedades literarias, científicas y artísticas; en sus diversas salas trabajan los investigadores y se hacen cursos de idiomas extranjeros; y en su salón central se dan constantemente conferencias sobre los más variados temas, en las cuales se oye la palabra de los más conocidos literatos, artistas, profesionales, hombres de ciencia, publicistas e historiadores del país.

Estas circunstancias hacen de la Biblioteca Nacional de Chile un centro de cultura en el cual se refleja constantemente toda la actividad intelectual del país, y que está especialmente habilitado para dar a conocer esa actividad en las demás naciones del Continente, y la de éstas en Chile.

¿Por qué no habría de realizar esta obra? ¿Por qué no habrían de realizarla las demás bibliotecas nacionales, cuyas facilidades y cuyas actividades no, son, seguramente, inferiores a las de la nuestra?

El acuerdo se impone. Ese acuerdo hará fructíferos muchos esfuerzos que, aislados, son estériles. Nuestra revista de bibliografía chilena y extranjera, por ejemplo, fundada con un fin general de información bibliográfica, pero teniendo en vista principalmente la información mutua panamericana, no ha podido hasta ahora cumplir este propósito primordial sino de un modo mediocre, precisamente por falta de una organización bibliográfica continental. Su "sección americana," que debería ser la más rica es, sin embargo, mucho más pobre que la "europea," a causa de las dificultades casi insuperables con que se tropieza para saber lo que, en cada mes, se ha publicado en América.

El acuerdo de las bibliotecas nacionales de todos los países de América, su combinación en una "unión bibliográfica panamericana," correctamente organizada, sobre bases prácticas y expeditas, podría traer, en lo intelectual, ventajas semejantes a las que ha producido, en lo comercial y en lo político, la "Unión Panamericana de Washington."

Sería menester, ante todo, crear en la biblioteca nacional de cada uno de los países del continente una sección u oficina central de información bibliográfica panamericana.

Esta oficina estaría encargada de suministrar a las demás bibliotecas del país, a sus universidades y colegios, a sus oficinas administrativas y al público en general, todos los datos que solicitaran respecto de la historia, la geografía, la organización política, la estadística y la producción científica, literaria o artística de cualquiera de los otros países de América.

Para poder suministrar estos datos, cada oficina central de información bibliográfica panamericana, debería disponer de un fondo completo de documentación adecuada, clasificada y catalogada en forma que haga expedita y fácil su consulta. Los sistemas de clasificación y catalogación deberían ser uniformes en todas las oficinas, a fin de que la información pueda ser fácilmente intercambiable. La elección de estos sistemas sería, naturalmente, materia de un acuerdo común; pero yo me permitiría recomendar, desde luego, la catalogación en tarjetas dispuestas por el doble orden, alfabético y de materias, con arreglo a la clasificación decimal adoptada por el congreso Bibliográfico de Bruselas—sistema usado con muy buen éxito en nuestra biblioteca desde que, a consecuencia de un voto del Primer Congreso Científico Panamericano, fué adoptado en el país por un decreto del Ministro de Instrucción Pública don Jorge Huneeus G.

¿Cómo obtendría cada biblioteca nacional la documentación necesaria para su oficina de información bibliográfica panamericana? Por medio de las otras bibliotecas nacionales que formaran parte de la unión. Cada una de ellas estaría obligada a suministrar a todas las otras la documentación referente a su propio país, para lo cual cada gobierno dictaría las disposiciones necesarias. Este intercambio, a cargo de

oficinas especiales, como son las bibliotecas nacionales, resulta siempre mucho más constante y eficaz que el intercambio directo de gobierno a gobierno, establecido en algunos tratados.

Cada Oficina tendría, en seguida, a su cargo la formación y remisión oportuna de bibliografías mensuales completas del respectivo país, si fuera posible impresas y en último caso, poligrafiadas o escritas a máquina. En estas bibliografías debería incluirse:

1. Una reseña completa de los libros y folletos publicados durante el mes, incluyendo el índice y las demás informaciones necesarias para formarse una idea general de su contenido y de su importancia;

2. Los sumarios de las revistas aparecidas durante el mismo tiempo, también con las anotaciones indispensables;

3. Una lista de los artículos de valor permanente o de importancia panamericana publicados en la prensa periódica; y

4. Una reseña de la música nueva publicada o ejecutada, de las producciones dramáticas estrenadas y de las principales obras de arte exhibidas.

Estas bibliografías mensuales deberían, en una palabra, estar calculadas para dar una idea completa del movimiento científico, literario y artístico del país durante el mes; con inclusión de todas las indicaciones necesarias para que los interesados puedan, desde cualquier punto del continente, obtener los libros y demás publicaciones de que en ellas se da noticia.

La tercera función de cada oficina central de información bibliográfica consistiría en suministrar, a los investigadores que los pidan, datos sobre el contenido de los archivos y sobre las fuentes de investigación histórica o de cualquiera otra especie; o el nombre y dirección de las personas que puedan suministrar esos datos; o, en general, todo lo necesario para facilitar a los estudiosos de cada país las investigaciones en los otros países, y para poner en conexión mutua a los que, en diversos puntos del Continente, están practicando estudios sobre una misma materia.

La cuarta, y una de las más importantes misiones de la "Unión Panamericana de Bibliotecas Nacionales," sería la organización del comercio internacional de libros dentro del continente. Cada una de las oficinas centrales de información bibliográfica estaría en conexión con los libreros más conocidos y más serios del país respectivo, para los efectos de la propaganda y venta de los libros que le fueran remitidos desde todas las demás repúblicas americanas, como asimismo para la colocación de las revistas.

Para dar una garantía efectiva a los autores o editores, el control estaría siempre en manos de la respectiva Biblioteca Nacional, la cual podría ejercerlo directamente en la capital y por medio de algún delegado oficial en las provincias.

Los libros se enviarían directamente de biblioteca a biblioteca. La biblioteca receptora los colocaría en las librerías, vigilaría su venta y recogería el producto o el saldo de libros por vender. Las bibliotecas se llevarían una cuenta corriente mutua, y los saldos, efectuadas las compensaciones del caso, se pagarían por giros anuales o semestrales.

Este plan, debidamente reglamentado, y llevado a efecto con espíritu práctico, abriría nuevos horizontes a la producción intelectual americana—especialmente a la de los países latinos—poniendo a disposición de los autores y editores un mercado diez o veinte veces mayor del que ahora tienen en perspectiva. Él crearía, probablemente, en la América latina la carrera productiva de hombres de ciencia y de hombres de letras.

Estos serían los principales trabajos a cargo de los oficinas de información bibliográfica panamericana, y, en general, de la "Unión Panamericana de Bibliotecas Nacionales."

Cada oficina funcionaría anexa a la respectiva biblioteca, ba o su dirección y responsabilidad inmediata.

La Biblioteca Nacional sería entonces, en cada país, el órgano central de información bibliográfica panamericana y de circulación inter-americana de la producción literaria y científica.

Las diversas bibliotecas nacionales de América estarían entonces en comunicación directa, mutua y constante entre sí, para los efectos de todas las funciones de sus respectivas oficinas de información panamericana. Y cada biblioteca nacional, a su vez, estaría en conexión, para los mismos efectos, con las demás bibliotecas de su país y con sus instituciones, autores, editores y público.

Los detalles de esta organización serían, naturalmente, determinados por un acuerdo internacional.

La proporciones restringidas de un estudio destinado a ser leído en un congreso científico no me permiten entrar en los detalles del proyecto que en las páginas anteriores he esbozado en sus líneas generales, en la esperanza de que los señores miembros del congreso le atribuyan la importancia con que a mi mente se presenta.

Creo sinceramente que la unión panamericana de bibliotecas nacionales, llevada adelante con fe y con espíritu verdaderamente cooperativo y fraternal, organizada con escrupuloso cuidado y propiciada con decisión por los Gobiernos y los pueblos respectivos, puede ser una contribución efectiva e importante en pro de una orientación más americana de la intelectualidad del Continente.

La Biblioteca Nacional de Chile y todo su personal estarían listos para asumir las responsabilidades y realizar con entusiasmo los trabajos que le incumbieran en la realización de esta idea; y tengo la convicción de que en todas sus hermanas del continente existe el mismo espíritu.

En la convicción de que este proyecto puede tener importancia suficiente para llegar a merecer un Voto del Segundo Congreso Científico Panamericano, me permito formularlo en los siguientes términos, que son una simple sugestión, susceptible de ser ventajosamente modificada por cualquiera de los señores miembros del congreso:

El Segundo Congreso Científico Panamericano acuerda recomendar a los Gobiernos de los países en él representados la creación de una unión bibliográfica panamericana, constituida por la asociación cooperativa de las bibliotecas nacionales de los diversos países de América.

En cada biblioteca nacional se crearía una oficina central de información bibliográfica panamericana.

Estas oficinas y la unión bibliográfica panamericana, en general, tendrían por objeto proporcionar todos los medios necesarios para facilitar el intercambio intelectual entre los países en ella representados.

La unión funcionaría bajo los auspicios de los respectivos Gobiernos, los cuales de común acuerdo, reglamentarían su organización y funcionamiento.

Sr. DARÍO SALAS. I have here a resolution which I would like to bring before the Congress. May I read it?

The CHAIRMAN. Yes; if you will.

Sr. SALAS (reading):

La literatura de todas y cada una de las nacionalidades americanas (excepto la colombiana) tuvo menos lectores que las literaturas francesa, inglesa, española, alemana o italiana. No debe esto atribuirse a escasez en la biblioteca de Chile, de libros producidos en el continente; pero ocurre que así como es fácil obtener los libros que se piden de Francia, Inglaterra o Alemania, resulta a veces imposible conseguir los de los países de América. La distribución de libros debe ser tan fácil entre los 50,000,000 de iberoamericanos como es entre los 100,000,000 de norteamericanos. Los medios de investigación internacional son insuficientes. La Biblioteca Nacional podría ayudar muchísimo en una unión bibliográfica panamericana. Dicha unión traería, en lo intelectual, ventajas semejantes a las que ha producido en lo comercial y en lo político la "Unión Panamericana de Washington." Se debe establecer en cada biblioteca nacional una oficina central de información bibliográfica,

que disponga de una documentación adecuada para facilitar la consulta. Creo que esta aspiración puede tener importancia suficiente para llegar a merecer un voto del Segundo Congreso Científico Panamericano, y me permito formular este voto en los siguientes términos, que no son, naturalmente, definitivos, sino una simple indicación susceptible de ser ventajosamente modificada por cualquiera de los señores miembros del congreso: El Segundo Congreso Científico Panamericano acuerda recomendar a los gobiernos de los países representados en él, la creación de una "Unión Bibliográfica Panamericana," constituida por la organización cooperativa de las Bibliotecas Nacionales de los países de América. En cada Biblioteca Nacional se crearía una oficina central de información bibliográfica panamericana. Estas oficinas, y la Unión Bibliográfica Panamericana en general, tendrían por objeto proporcionar todos los medios necesarios para facilitar el intercambio intelectual entre los países en ella representados. La "Unión" funcionará bajo los auspicios de los respectivos Gobiernos, los que, de común acuerdo, reglamentarán su organización y funcionamiento.

The CHAIRMAN. Is there a motion for the adoption of this resolution? Unfortunately it comes before us after the last meeting of the resolutions committee. I wish it had been presented earlier. If there is a motion to adopt the resolution, I will present it to the chairman of the committee of the final act, and possibly it can be considered there. I can not promise, however, that this will be done. Do you make a motion for its adoption?

Sr. SALAS. Yes.

Mr. FAIRCHILD. I second the motion.

The CHAIRMAN. It is moved and seconded that the resolution read by Prof. Salas be adopted. Those in favor will signify by saying aye. Opposed, no. The motion is adopted. Do you know whether it is true that there is a Pan American section in any of the countries? Does any national library attempt to do that now?

Sr. SALAS. I don't think so.

The CHAIRMAN. A very desirable thing, it seems to me.

Mr. FAIRCHILD. I think that proposition would be seconded by Mr. Putnam, of the Congressional Library.

UNA CONTRIBUCIÓN A LA COMPRESIÓN PANAMERICANA.

Por JOSÉ MARÍA GÁLVEZ,

Profesor de la Universidad de Chile.

1. Dos son las almas que nutren con sus vidas la cultura de la América: la de los descendientes del pueblo de Isabel de Inglaterra, los Estados anglo americanos, y la de las naciones latinoamericanas.

A la división de la cultura europea en dos partes, una insular e individualista otra continental o colectivista que se han formado en su carácter moderno desde los tiempos de Isabel y Felipe II hasta nuestros días, corresponden las dos partes de la cultura europea en América que de ellas se han derivado. Vosotros, los hombres y mujeres de los Estados Unidos tenéis como rasgo esencial de vuestra herencia cultural de Europa el individualismo británico que habéis hecho florecer en el suelo americano del norte haciéndolo rendir frutos maravillosos por obra de la portentosa actividad de vuestras individualidades.

Nosotros los hombres y mujeres de la América Latina tenemos como un rasgo esencial de nuestra herencia cultural el colectivismo continental de Europa que hemos desenvuelto en las tierras americanas del sur donde lo mucho que se ha hecho es obra de los Gobiernos y donde se mira—generalmente—y hacia los Gobiernos para lo mucho más que aun nos queda por hacer.

Es un hecho notable de los días históricos en que vivimos que, mientras la división de la cultura europea en insular o individualista y en continental o colectivista es una de las fuentes principales de las discordias que hoy desquician al Viejo Mundo, las dos mitades de la cultura europea en el Mundo Nuevo tienden a acercarse en reuniones como estas.

Dos almas distintas oriundas de la vieja Europa quieren unirse en el seno joven de la América. Se está formando un ideal panamericano grande y nuevo que es un augurio feliz para la humanidad.

2. El ideal panamericano de solidaridad continental dentro de la libertad y de la mutua consideración es lo que hoy nos une, lo que forma el espíritu de estas asambleas que llamamos congresos panamericanos. Son ellas expresiones vivientes del más alto de nuestros comunes ideales.

3. Los congresos pan americanos o de política continental buscan la realización del ideal del panamericanismo, tratando de imprimir rumbos comunes a la vida política del continente. Esas asambleas panamericanas políticas tienden a orientar una de las manifestaciones más fundamentales en la vida externa o práctica de los estados del Nuevo Mundo, la política.

4. Los Congresos Científicos Panamericanos persiguen la realización del ideal panamericano, esforzándose por imprimir rumbos comunes al cultivo general de las ciencias en nuestro continente. Estas asambleas panamericanas científicas tienden a orientar una de las manifestaciones más fundamentales en la vida interna o ideal de los pueblos de América: el pensar panamericano.

5. Siendo la vida interna el terreno donde tienen hondas raíces las manifestaciones de la vida externa; todo progreso en la vida práctica o externa de los individuos y de las colectividades presupone un progreso en la vida interna de las mismas.

Convencido del poder incontrarrestable de las ideas, considero que de las dos clases de congresos panamericanos, es por ahora, la segunda o científica la de más vastas proyecciones para el porvenir de nuestros pueblos.

Los Congresos Científicos Panamericanos constituyen, para mí, la institución de la cual deben nacer nuevos ideales comunes para nuestras naciones y la cual debe también sugerir los medios para tratar de realizar en general todas las aspiraciones continentales que abrigamos y en especial nuestro gran ideal de solidaridad ya mencionado que denominamos "Panamericanismo."

6. El medio más eficiente para acercarnos al ideal del panamericanismo consiste, sin duda, en fomentar la comprensión panamericana.

La comprensión panamericana se presenta ante nosotros como una de las grandes finalidades de los congresos panamericanos. Su crecimiento es la garantía mejor de paz continental. Lo que de ella ya existe ha dado origen a la buena voluntad que nos une. Es de desear también que nazca de ella lo que enriquezca la obra de solidaridad en que estamos empeñados, añadiendo a los esfuerzos del pensamiento de nuestros intelectuales, los tesoros del sentimiento panamericano, haciendo que el panamericanismo no sea solo el fruto de las cabezas sino también de los corazones mejores de la América. Entonces habremos adquirido por entero la cooperación valiosa de la parte más hermosa de la vida en el Nuevo Mundo, de la mujer de Pan América.

7. La misión mía en esta ocasión consiste en invitaros a encauzar algunos de nuestros esfuerzos en bien de la comprensión panamericana, estimulando el estudio científico de dos de las más importantes manifestaciones de la vida en nuestro continente

de los tres grandes idiomas cultos de la América por una parte y por otra del conjunto de soluciones que los individuos y los pueblos americanos dan a los problemas que atañen a los orígenes y a las finalidades del universo y de la vida.

8. Los idiomas son las manifestaciones más humanas de la vida animal. Son ellos los vehículos de los pensamientos de los individuos y de las naciones, los moldes en que se vacían las idiosincrasias de los unos y de los otros.

El primer aspecto de la comprensión entre individuos y entre pueblos es el idiomático.

En toda comprensión, el idioma no es una finalidad pero sí es un medio indispensable. Es él la puerta que tiene el extranjero para penetrar al edificio de una cultura extraña.

A las dos ramas más esforzadas de la cultura europea que florecen en el Nuevo Mundo, a los pueblos ingleses e ibéricos de nuestro continente, a las dos almas colectivas diversas de la América, corresponden dos lenguajes distintos, uno germánico y otro, el idioma de Shakespeare por una parte y por otra las lenguas de Cervantes y de Camoens.

La comprensión mutua de los pueblos anglo e iberoamericanos exige que se estudien, con mayor intensidad, las lenguas española y portuguesa y que en las regiones americanas de lenguajes castellano y portugués se estudie la lengua inglesa con una intensidad siempre mayor. Si se satisficiera esta exigencia, se habría puesto en manos de cada niño de la América entera un instrumento indispensable y poderoso para compenetrarse de todas las manifestaciones más importantes del espíritu en el continente que habita. La gran semejanza entre las lenguas española y portuguesa hace que en realidad esta exigencia sea menor de lo que pudiera parecer.

9. El conjunto de soluciones que los individuos y los pueblos de América dan a los problemas que atañen a los orígenes y a las finalidades del Universo y de la vida constituye lo que podemos llamar la filosofía panamericana. La comprensión de esta filosofía constituye la más alta comprensión intelectual de los individuos y de las colectividades que viven en nuestro continente, uno de los objetivos más elevados de la comprensión panamericana.

El estudio de la ciencia por la ciencia, persigue un alto fin. Un fin más alto aún se persigue con el estudio de la ciencia por la vida.

Los Congresos Científicos Panamericanos persiguen el estudio de la ciencia por la vida americana.

Siendo la filosofía la ciencia general por excelencia, hacia la cual debe elevarse el cultivo de todas las ciencias especiales la misión científica general más alta de los Congresos Panamericanos Científicos consiste, a mi juicio, en estudiar y fomentar el estudio de la filosofía panamericana.

CONCLUSIONES.

10. (A) El Segundo Congreso Científico Panamericano, considerando que la comprensión panamericana puede ampliarse y ahondarse grandemente, intensificando el estudio del inglés en la América latina y del castellano y del portugués en la América anglosajona; acuerda:

1. Declarar idiomas panamericanos al inglés, al castellano y al portugués;

2. Solicitar de los Gobiernos de todos los estados del continente americano y recomendar a las universidades y demás instituciones docentes de América que influyan a fin de que se intensifique en el estudio de los idiomas panamericanos; dando preferencia a estas lenguas en los planes de estudio; fundando escuelas de lenguas que den importancia especial al estudio de las panamericanas y en las cuales se completen los estudios lingüísticos con enseñanzas sobre la vida real correspondiente (por medio de museos adecuados, etc.); formando un buen profesorado nacional de idiomas pan-

americanos extranjeros de cuya preparación forme parte la estancia de un año o más en el país cuya lengua panamericana extranjera corresponda enseñar; apoyando el intercambio de profesores y de estudiantes de idiomas panamericanos; estableciendo, como un requisito para recibir el título de profesor de instrucción secundaria que, en la América Latina se conozca suficientemente el inglés y que en los Estados Unidos se conozca suficientemente el castellano o el portugués, y, por todos los otros medios que ellos estimen por conveniente.

3. Organizar una sociedad de idiomas panamericanos, en la cual estén representados todos los países del continente que tenga por objeto velar por la implantación de la conclusión anterior e informar a los Congresos Científicos panamericanos futuros sobre su actividad en bien de la propagación de los idiomas panamericanos.

(B) El Segundo Congreso Científico Panamericano; teniendo presente que los individuos y los pueblos cultos tienen su filosofía propia, que a toda vida cultural nueva, como la de los pueblos Americanos, corresponde una filosofía nueva, y que la ciencia de la filosofía es la ciencia general por excelencia; acuerda:

Solicitar de los Gobiernos de las Repúblicas americanas y recomendar a las universidades y otras instituciones de educación superior del continente:

1. La creación de Cátedras de Filosofía Científica independientes de todo fin profesional que tengan por objeto difundir el conocimiento de la filosofía en general y en especial del desenvolvimiento de las ideas filosóficas en América.

2. La fundación de seminarios científicos de investigación filosófica que investiguen especialmente el carácter filosófico de las más importantes manifestaciones de la vida cultural en los países de América; que traten de formar corrientes filosóficas que correspondan al perfeccionamiento de la vida en cada país y que trabajen por imprimir a la filosofía panamericana rumbos que estén en armonía con nuevos aspectos de la vida panamericana.

Sr. GALVEZ. I should like to amplify my paper by a word or two, with the permission of the chairman, as I have made an effort to condense it as much as possible. I know the fundamental things with regard to this Congress and about the future development of our relations, and think, therefore, with respect to the form of this American understanding, that an intensive study of English in our Latin-American countries and of Spanish in North America is one of the ways of bringing about a better mental understanding. Secondly, I think that the proposition in regard to scientific philosophy may perhaps seem superfluous. In general, however, there has been little done in the way of studying the most important manifestations of life on our continent from a scientific point of view. I do think that in this way we are likely to bring about a better understanding than can be accomplished in any other manner. We shall certainly be able to know more about the intellectual ideas of both divisions of the American continent.

We have heard much about Pan Americans and Pan American understanding, of ideals, and of financial conferences. We have, however, sadly neglected one side, and one that goes to the very foundation—ideal foundation—of our culture. We all know that we have the culture of Europe flourishing in our countries. The old ideas of Europe are reflected there, but these ideas are developed in a new

form. They are the same ideas, however, and so it is really fundamental for us in the South to know more about that idealism which is the foundation of the culture of North America. There is a great deal to be done, I think, for the good of our mutual relations in studying the psychology of the different countries and in carrying on this psychological research among the individuals of our countries. Sociology, of course, is also included by me under that heading.

As to the proposal in regard to the foundation of chairs of the history of religions in our countries, I do think that is one of the most important things to be done in the future, e. g., to study the religion of these countries from a scientific point of view. I do not especially care about identifying these ideas with any special tendency of Christianity, but just to speak of Christianity as the main foundation—the main ideal foundation—for all the culture of the continent. From this point of view I think all Christians on the continent can unite in doing their best, so as to study the foundation which I say is the philosophy of the peoples of America in general. Before leaving I would like to read a couple of conclusions which have not been presented by me to the Congress. The first one is [reading]:

In the opinion of the Second Pan American Scientific Congress, scientific congresses should be organized, whose object shall be to study problems having to do with groups of related sciences. This congress recommends that as a beginning a Pan American Scientific Congress of Education be held.

I should also like to read that in Spanish [reading]:

El Segundo Congreso Científico Panamericano, estima que hay conveniencia en organizar congresos científicos que tengan por objeto el estudio de problemas referentes a grupos de ciencias afines, y recomienda empezar por la celebración de un Congreso Científico Panamericano de Educación.

Mr. Chairman, I appreciate fully the good spirit of this general scientific gathering. I know such conclaves are difficult to organize and can only be held from time to time.

In the course of several years it would be very wise, however, for the furthering of this Pan American understanding to hold meetings of congresses composed of groups of the related sciences so as to establish this as a principle. I say the establishing as a principle because there has been already, I believe, congresses of Pan American medical men. It is proposed, therefore, to hold now a Pan American scientific congress of groups of related sciences. Now, I believe this section has submitted a proposal to hold congresses of education. The majority of the section is, perhaps, of the opinion that there is great need to have such congresses as soon as possible. I hope that at the last meeting of the congress tomorrow it may be found advis-

able, to do something practical, to say also where this first Pan American scientific congress of education shall be convened. There are many places which would be found convenient, such as Montevideo in South America, or some more central locality. Then we shall have the pleasure of bringing you of the north to the south. Another place which I dare not mention as the first place, because it would perhaps be proposing too much trouble for our hosts—San Juan, in Porto Rico—where I think we of the Latin American countries would be able to obtain the very best idea as to what the United States has done in extending its own culture, assimilating it with the culture of a Spanish-American country. I have heard that wonders have been accomplished by the United States in its cultural work in Porto Rico. It would be for us, therefore, a great boon to see and to learn of the progress of the North Americans in connection with their educational work. Another little suggestion, and that is my private suggestion, which is separate from this conclusion, e. g., that an institution such as the National Education Association might have a share in organizing such a Congress, and of course, as vice president of the University of Chile, I would be glad to have it done. As I am encroaching too much on your patience, I will read now these two other conclusions. [Reading]:

The Second Pan American Scientific Congress resolves: First, To recommend to the educational institutions of the American continent the interchange of educators of all grades, of university students, and of students of normal and technical schools; second, to request the governments of the American Republics to further this interchange and to help professors, teachers, and students in visiting other countries of America for purposes of instruction.

Mr. Chairman, there are two ideas in this: First, the interchange of educators, a policy which would not be very practicable for the present; and, second, a request to the Governments, institutions, and authorities to further the visits of teachers from one continent to the other and from one country to the other. I think that that is the more practicable of the ideas for the present. During the long vacation of the southern countries you have here the most intense part of your work—in January and February. We can then come up here very well, as our most intense work is at the end of July, and in August and September. You have your holidays then, so that some of the teachers from here could go down and just refresh their Spanish in a short time. The last of these conclusions is [reading]:

The Second Pan American Scientific Congress recommends that influence be brought to bear upon the educational authorities of the American Republics, to the end that English may become the first compulsory foreign language to be taught in Latin-America, and that Spanish may become the first compulsory foreign language to be taught in Anglo-Saxon America.

I teach English in the University of Chile, but it is not for that reason that I regard the teaching of the languages the most important thing in the world. But it is just the same as the doors in a building. They are not the most important parts of a house, but they are undoubtedly indispensable in order to get into the building. So I would say the languages are indispensable in the same way. Before I stop I would like to extend the greetings sent by the Educational Association of Chile to the National Education Association of the United States. We are greatly indebted to this institution without your knowing it perhaps. It has been a model to us in many ways.

Mr. CLAXTON. Dr. Galvez, may I say for this section as a whole that your paper deserves an audience of the two Americas. You have expressed the idea of a higher platform than that of an alliance for offense or defense in any military way: The union of the souls of the two peoples. You have expressed a higher civilization, an ideal civilization. In earlier remarks before this section I said that other countries had formed an alliance for offense or defense in a military way, or for commerce, and that the Pan American republics might ally themselves for higher ideals, and for the full development of all their peoples. A most practical suggestion, I think, has been made in the resolution. There should be smaller associations, associations of sections on education or on science or on whatever they may be, meeting more frequently than the larger body can; and already there has gone to the committee on resolutions a resolution to this effect: That there should be organized an educational association. I personally should be delighted if it could meet at San Juan. Of course that would be inconvenient for many South Americans. Would you like to have your resolution voted on? Is there a motion to that effect?

Sr. GALVEZ. The motions presented here in this paper have been presented to the executive committee. The others are only my private opinion. My desire was just to have some expression of opinion from the members of this association.

A DELEGATE. I think that the writer has expressed the finest ideas I have heard in any of the sessions of this congress. I want to emphasize and indorse most heartily what he said concerning the interchange of university professors between the North and the South. He has presented the matter in such a happy way, showing that our vacations can be spent not only in a very pleasant way by going down there when our summer vacation is on, but theirs by coming to us in our winter season. I think that is a very happy thought, and since there are institutions that are undertaking to further the spirit of Pan American and international solidarity and peace, I think there is no more practical way that those institutions could

show their spirit of Pan Americanism than in paying at least a portion of the traveling expenses of persons who are willing to go but can not pay all the expense. I want to indorse and emphasize that idea.

Commander EARLE. Mr. Chairman, as the representative of the United States Naval Academy, Annapolis, I wish to say that what I consider most interesting in the speaker's remarks is that portion in regard to the study of his language by us, and of our language by those of South America. At Annapolis one foreign language is required to be taken by each midshipman. The majority have chosen Spanish. They continue the study of that language throughout their course at Annapolis. Although both French and Spanish are important to us in our military way, I consider that the learning of Spanish by American naval officers is one of the strongest factors in the cementing of our friendships with South America, and the understanding of their interests in us and of ours in them. It must be completely understood that we naval officers do not go around the world in a military sense, but we do hope to carry our best influences from our home ports to those of Spanish America. We have much to learn and to enjoy always, of course, on our visits to other countries. I think, therefore, that the studying of Spanish by all Anglo-Saxons in this country is a most important factor toward the extension of Pan Americanism.

Mr. CLAXTON. Referring to the proposal that a Pan American congress of education be formed, I beg to say that I am very heartily in favor of bringing about in some way an international congress of education which shall not be quite so formal as one to which the delegates would be accredited by their Governments. When he comes—the delegate accredited by his Government—he feels that what he says he is saying for his Government, and then he can not talk quite so freely as if he were a member of a congress. Such a congress might meet once in two or three years, with five members or delegates from each country, and then, in addition to that, one for every 10,000,000 people. This congress would enable us to know ourselves and each other by personal contact. I say that because one does not really know himself until he knows others. As Commissioner of Education I have found that every problem of education is international and world-wide. I never feel that I have been able to get the best views on any subject until I know what every other country is doing in that particular line.

This congress would help also toward making a Pan American educational policy which should include the opportunity for every child to have an education, to prepare for life, for citizenship, for making a good, honest living, and for destiny. It would be a great

thing if we could have such a spirit as that throughout all the country. I have not given any thought to time or place of meeting, as I think that might probably best be referred to those who are interested to perfect plans through correspondence, because it would probably have to be worked up in that way. Don't you think so?

Señor GALVEZ. That would be one of the solutions; but I do think that on one of these occasions when we are all together, it would be best to decide something, because after we have gone home the thought of the congress is apt to be forgotten.

On second thought, it might be better to begin these congresses of education in such a central country as Cuba, as we in the south have already held congresses in Rio de Janeiro, in Uruguay, in Argentina, and in Chile. I think this is the first one held in the northern hemisphere; so, perhaps, it would not be bad to have the educational congress begin there in that central part of the continent. I would be much obliged to hear Dr. Claxton's opinion as to that. Would it be practicable to fix some place that we might be soon able to look forward to and know two years beforehand? It might take place about the 1st of January, 1918.

Mr. CLAXTON. I shall be very glad to send that on to the committee. I move you, Mr. Chairman, that, if it is agreeable to this executive committee, there be announced in their report the desirability of holding at Habana, some time early in the year 1918, an international congress or conference on education.

Mr. FAIRCHILD. International or Pan American?

Mr. CLAXTON. Pan American congress on education.

Mr. ZANER. I second the motion. I am very pleased to hear that.

Motion carried unanimously.

The CHAIRMAN. About the 1st of January, 1918, to be held in Habana if it is agreeable to the executive committee and to the Government at Habana. As you say, it would be wise perhaps to include in the motion the wish of the section to this effect: That they have no official members appointed by the Government, but that the Governments may help the members to come. It is well that it should be so, so that it may be a meeting of the larger freedom which educators need on such occasions. If there is nothing else to be said, I would like, in the name of the section, to thank those present for the help given, to give a special vote of thanks to the authorities of the United States that have contributed to this congress and more especially to Dr. Claxton for the manner in which he has promoted these meetings, and to express the hope that he may go on for many years doing his good work at the head of such an important department, and that this work may be always more and more in

the direction of Pan Americanism that will improve our own nations and furnish education for the welfare of the whole American continent.

Before adjournment the following paper was announced as read by title:

**AS PRINCIPAES ASSOCIAÇÕES LITERARIAS E SCIENTIFICAS DO BRASIL,
1724-1838.¹**

Por MAX FLEIUSS,

Secretario Perpetuo do Instituto Historico e Geographico do Brasil.

PRIMEIRA PARTE.

As duas tentativas mais antigas de agremiação intellectual, realizadas pela civilização européa, distam mais de mil annos uma da outra: a escola de Platão, no jardim de Academus, é do anno 388 antes da éra actual, e a academia palatina, assim chamada por se reunir no próprio palacio de Carlos-Magno, creou-a este soberano em 785.

Só o Renascimento, porém, é que havia de determinar o apparecimento de sociedades especulativas, a principio exclusivamente estheticas e depois scientificas e philosophicas, destinadas a influir na fundação de cenaculos similares por todo o mundo culto.

Assim, da Academia degli Umili, fundada em Florença em 1540, originou-se a Academia della Crusca (isto é, do farello,) a que se deve o celebre dictionario, cuja editio princeps é de 1612, seguida pela Academia del Cimento, alli estabelecida em 1657 pelo cardeal Leopoldo de Medicis. A Arcadia de Roma data de 1690. São tambem do seculo XVII as associações analogas creadas na França: a Academia Francêsa, fundada pelo cardeal Richelieu em 1635; a Academia das Inscriptões e Bellas-Letras, e a Academia das Sciencias, ambas devidas a Colbert em 1663 e 1666; e as de Pintura e Escultura, de Musica e de Architectura foram installadas, respectivamente, em 1648, 1666 e 1671. Ao neto do "roi-soleil," Philippe V, que succedeu em 1700 a Carlos II, é que cabe a gloria da criação da Academia Hespanhola, moldada pela Francêsa; e, anteriormente, á semelhança dos agrupamentos coetaneos de nomes exquisitos—Immoveis, Gélidos, Solitarios, Insensatos, Surdos, Ociosos—de origem italiana, vira a patria do Cid apparecer os Nocturnos (de que foi alma-mater Guillém de Castro, comediographo famoso, 1569-1631), os Desconfiados (de Barcelona), e a Academia do Bom-Gosto, esta fundada pela condessa de Lemos, na primeira metade do seculo XVII.

Em Portugal, o movimento correspondente ao que acabámos de esboçar desabrocha depois da restauração de 1640: os Generosos congregaram-se no palacio do trinchante-mór do reino, dom Luis da Cunha, e secretariava-os o conde de Villa-Maior; attribue-se ao conde de Ericeira a paternidade das conferencias Discretas, das quaes provavelmente resultou uma obra estimabilissima, o Vocabulario de dom Raphael Bluteau; e, a exemplo do que se passava então na Italia e Hespanha, viu a terra de Affonso Henriques proliferar no seu seio, todas de curta duração e de menor proveito, as Sociedades dos Instantaneos, Solitarios, Illustrados, Occultos, Ignorantes, Humildes, Obsequiosos, Insignes e Anonymos * * * Dentre esses gremios ephemeros,

¹ Editor's Note.—The introductory paragraphs only of the first and second parts of this interesting and valuable study are herein printed. The third part is printed in full.

salientou-se a Academia dos Singulares, fundada pelo inquisidor-mór Pedro Duarte Ferrão.

Porquanto o chamado Renascimento não fôra um phenomeno regular na evolução do occidente, onde estava em pleno apogeu o catholicismo, implantou-se nos melhores espiritos a deordem que os levou a intrometter em suas producções o polytheismo greco-romano, ás vezes em manifesta confusão com a theologia e theogonia então dominantes. Essa anomalia, de par com outras causas, é o que explica como, deede fins do seculo XVI até grande parte do XVII, se alastrou pela Europa a preocupação dos trocadilhos, dos concetti insulsos, das metaphoras arrojadas e o tratar de questões mais ociosas e futeis, quaes as debatidas, não raro, pelos escolasticos medievaeas. Essa perversão literaria, que se chamou na Italia marinismo (do poeta Marini, autor do Adonis, 1569-1625), e na Hespanha gongorismo (de dom Luis de Góngora y Argote, 1561-1627, poeta que fundou o estilo culto), tendo attingido á Inglaterra, onde tomou de Euphues, seu introductor alli, o nome de euphuismo, e havendo-se ostentado na Pleiade, que surgiu em França sob Luis XIII, não podia deixar de reflectir-se em Portugal, onde floresceu por muito tempo com a denominação de cultismo ou culturanismo.

Não podia a colonia luso-americana, onde o progresso se accentuára rapido no seculo XVIII, graças ao descobrimento das grandes riquezas metallicas, ouro e diamantes, deixar de contrahir a mania das aggremações literarias, com os mesmos defeitos com que a metropole as havia imitado da Hespanha e da Italia.

Vamos, em ligeira synthese, tratar, na ordem seguinte, das associações especulativas que teve o Brasil no seculo XVIII: (a) a Academia Brasileira dos Esquecidos; (b) a Academia dos Felizes; (c) a Academia dos Selectos; (d) a Academia Brasileira dos Renascidos; (e) a Academia Scientifica do Rio de Janeiro; (f) a Sociedade Literaria do Rio de Janeiro.

SEGUNDA PARTE.

Neste capitulo, trataremos, muito succintamente, das principaes associações literarias escientificas do seculo XIX, que, ou simplesmente ideadas ou convertidas em realidade até 1838, precederam o apparecimento do Instituto Historico, o qual constituirá, por si só, o objecto da terceira parte deste nosso modesto e despretençioso trabalho.

Foram as seguintes: (a) a Real Sociedade Bahiense dos Homens de Letras; (b) o Instituto Academico das Sciencias e Bellas-Artes; (c) a Academia Fluminense das Sciencias e Artes; (d) a Sociedade Auxiliadora da Industria Nacional; (e) a Academia Imperial de Medicina—as tres primeiras mortas em o nascedouro.

Embora dignas de menção e de estudo, por seus elevados designios ou pelos beneficios que prestaram á nossa patria, deixamos, entretanto, de referir-nos, a qui, a outras associações, creadas no Brasil ao findar o primeiro imperio ou na agitada e fecunda phase regencial, apenas por não se enquadrarem bem na denominação especial que tomámos por mira.

Distinguiram-se algumas pelos serviços que prodigalizaram á educação popular, como: a Sociedade Jovial Instructiva (com este nome installada, a 5 de setembro de 1829, no becco do Proposito, hoje rua Barão de S. Gonçalo), mais tarde Amante da Instrucção, e honorificada com o titulo de Imperial; a Sociedade Elementar, estabelecida aqui em 1831; e a Sociedade Literaria, tambem desta capital e que durou de 1833 a 1844.

Entre as que surgiram nas provincias, notabilizarem-se: a Sociedade de Agricultura, Commercio e Industria, devida á iniciativa de Miguel Calmon du Pin e Almeida (depois marquês de Abrantes), e a Sociedade Philomatica de Chimica, ambas na Bahia, e a Sociedade Promotora da Instrucção Publica, em Minas Geraes, todas do anno de 1832.

TERCEIRA PARTE.

O INSTITUTO HISTORICO E GEOGRAPHICO BRASILEIRO.

Como vimos no capitulo anterior, foi no seio da Sociedade Auxiliadora da Industria Nacional que nasceu o benemerito gremio de que nos vamos occupar nesta terceira parte da nossa obscura monographia.

Na associação fundada por Ignacio Alvares Pinto de Almeida e de que era então primeiro secretario o marechal Raymundo José da Cunha Mattos, leu este, em sessão do conselho administrativo, sob a presidencia do notavel scientista frei Custodio Alves Serrão, a 18 de agosto de 1838, uma proposta em que elle e o secretario adjunto conego Januario da Cunha Barbosa suggeriam a creação de um Instituto Historico e Geographico Brasileiro.

Em assembléa geral daquella referida aggrémiação, effectuada no dia seguinte, foi unanimemente approvada a importante indicação.

A 21 de outubro do mesmo anno, no salão das sessões da Sociedade Auxiliadora, o presidente desta, marechal Francisco Cordeiro da Silva Torres, declarou installado o novo cenaculo, para o qual foram eleitos o visconde de S. Leopoldo, o conego Januario de Cunha Barbosa e o dr. Emilio Joaquim da Silva Maia para os cargos provisorios de presidente, primeiro e segundo secretarios, respectivamente, ficando encarregados os dois primeiros da organização dos estatutos, para o que se convidou tambem o marechal Raymundo José da Cunha Mattos.

A 25 de novembro, discutidos e approvados os estatutos, e contando o novo gremio, desde a reunião anterior, com 27 socios fundadores, procedeu-se á eleição da mesa directora e das commissões, as quaes se constituíram com os nomes seguintes: Presidente, o visconde de S. Leopoldo; vice presidente e director da secção de geographia, o marechal Raymundo José da Cunha Mattos; vice-presidente e director da secção de historia, Candido José de Araujo Vianna; primeiro secretario perpetuo e director da commissão de estatutos, redacção da Revista, bibliotheca e archivo, o conego Januario da Cunha Barbosa; segundo secretario, o dr. Emilio Joaquim da Silva Maia; orador, o major Pedro de Alcantara Bellegarde; thesoureiro e director da commissão de fundos, José Lino de Moura; membros da commissão de historia os dres. Antonio Alves da Silva Pinto e Emilio Joaquim da Silva Maia; membros da commissão de geographia, José Silvestre Rebello e o coronel Conrado Jacob de Niemeyer; membros da commissão de fundos, Thomé Maria da Fonseca e Alexandre Maria de Mariz Sarmiento; e membros da commissão de redacção da Revista, o dr. José Marcellino da Rocha Cabral e Antonio José de Paiva Guedes.

Na primeira sessão ordinaria, realizada a 1º de dezembro, propoz o conego Januario da Cunha Barbosa se pedisse ao Imperador a graça de aceitar o titulo de Protector do Instituto, ao que annuiu o monarcha, conforme sua resposta, datada de 19 de março do anno seguinte.

Approvou o governo imperial, em 26 de fevereiro de 1839, os estatutos da nova associação, que passou a funcionar no paço da cidade.

Eis ahí como surgiu o nosso amado e benemerito Instituto, a cuja summaria apreciação vamos proceder sobre as duas epigraphes seguintes: (a) serviços geraes; (b) a Revista.

(A) SERVIÇOS GERAES.

Quando, cerca de tres lustros após a nossa definitiva separação politica da metropole portugueza, lançaram os esclarecidos patriotas do periodo regencial os modestos alicerces desta inestimavel aggrémiação no sólo opulento do Brasil, talvez não calculassem, por mais previdentes que fossem, toda a extensão dos beneficios com que a sua utilissima creação ia contribuir para o progresso cultural da nossa nacionalidade.

Entretanto, se outros serviços não devessemos ao vigoroso interregno da Regencia— a mais accentuada phase de experimentação democratica e de proveitosa actividade constructora do passado monarchico; a fundação do Instituto Historico, por si só, bastaria a aureolar aquella época inesquecivel.

Desde logo se fez sentir o influxo salutar do novo cenaculo nos destinos da patria, então de continuo agitada pelos pronunciamentos militares e fortemente convulsãoada pelas lévas de broquéis dos unitaristas e federalistas.

Nelle se abrigaram, como que se afastando por momentos ás sempre desencadeiadas procellas das facções, que se degladiavam no parlamento, na imprensa e nos comícios, os politicos de mais evidencia daquella quadra memoravel e os expoentes da intellectualidade patriaica nos varios ramos das sciencias e das letras.

No templo que em boa hora haviam erguido para o culto da terra amada, empolgava-lhes os corações uma serena paz, accendendo nelles, em vez da scentelha das subalternas paixões pessoais, o desejo vehemente da solidariedade e da ordem e o elevado escopo de um progredir sem tortuosidades, que se unisse ás correntes naturaes, constructora da evolução normal do país.

Dahi, o papel proeminente que o Instituto Historico bem depressa representou no congraçamento geral dos grupos e na mais conveniente directrix das tendencias sociaes, das legitimas aspirações politicas dos partidos, de modo que o energico appello ás tradições, por elle feito sem cessar, foi ouvido, foi attendido, e, assim, cumprindo sempre esse excelso e indeclinavel dever, veiu elle acompanhando passo a passo, com a mira jámais afastada do futuro grandioso da patria, o restante meio seculo de existencia do imperio.

Nem poderia deixar de ser assim, desde que a direcção do meritorio gremio fóra confiada aos homens publicos mais prestantes e influentes do regimen, e o proprio chefe do Estado, como vimos, apenas recebeu o convite para honrar o novo cenaculo com a sua protecção, liberalizou-lha até ao seu derradeiro dia de governo.

Se não é obrigação comezinha tributar encomios aos fundadores do Instituto e aos devotados directores que tem elle tido em sua hoje quasi secular existencia, manda a justiça mais elementar que se não ponha em olvido o muito que deve elle a d. Pedro II, o Magnanimo.

Durante 40 annos, isto é, durante quasi todo o seu extenso reinado, timbrou o sabio monarcha não só em abrilhantar-lhe as sessões com a sua augusta presença, tomando parte activa nos debates, como tambem em enriquecel-o com doações magnificas. As actas do Instituto patenteiam que o Marco-Aurelio do mundo contemporaneo nunca, desde 15 de Dezembro de 1849 até que a revolução de 15 de Novembro de 1889 o despojou do throno, deixou de comparecer, excepto quando ausente da então cõrte, ás reuniões da benemerita aggremação, e tal era o prisma porque encarava os serviços della ao país, que, em seu proprio nome e no de sua virtuosa consorte d. Theresa Christina, a galardoou com livros raros e preciosos; o melhor, pôde-se affirmal-ó sem receio de erro, da valiosissima bibliotheca da nossa queridissima associação.

Soube esta, porém, corresponder dignamente ás vistas e á munificencia com que a distinguiu o excelso soberano, filho da nossa terra. Não se limitou a gratidão do gremio ás honras que tributou a dom Pedro II e ás apothecoses que lhe rendeu, mas sempre efficazmente auxiliou a ardua missão do dynasta brasileiro, envidando todos os esforços, que lhe cabiam na alçada, em favor da solução de questões vitaes do país, em beneficio, finalmente, do sagrado apanagio intellectual e moral da nossa nacionalidade.

Ainda no mesmo anno em queriam ser decretados a deposição e o banimento da familia imperial pela revolução triumphante, realizava o Instituto a exposição das obras de historia chilena, pessoalmente dirigida pelo inclito monarcha, em homenagem aos nossos prezados visitantes daquella amiga Republica transandina.

A quéda da monarchia não alterou, nem podia alterar, as condições visceraes da nossa prestimosa aggremação, nem os supremos intuitos que ella collimava.

O advento da nova ordem de coisas achou-a disposta á prestar os mesmos serviços que não regateara nunca ao regimen extincto: seu alvo era a patria.

Assim, embora o Instituto continuasse a ser dirigido pelas mais salientes e dignas figuras do imperio, servidores fiéis do Brasil, foi á nossa antiga e operosa companhia

que pediram os proptamente concedidos subsidios de alta valia para que se dirimissem os nossos vetustos litigios territoriaes com as nações limitrophes, os advogados dos subidos interesses de nossa patria nessas graves e magnas pendencias.

Com effeito, a bibliotheca e o archivo do Instituto não têm servido tão sómente á fidedigna documentação dos estudiosos de qualquer matiz mas hão proporcionado provas seguras e concludentes, quer para a salvaguarda dos nossos direitos reaes, quer para a defesa da nossa nacionalidade, nas questões que temos tido com povos estrangeiros.

Não é facil recensear, em rapida synthese, todos os actos de benemerencia civica que constituem o fulgido acervo do nosso Instituto.

Diremos, todavia, que delle partiu, mais que de qualquer outra origem, a iniciativa de honrar os vultos maximos da nossa patria, expondo-os no bronze imperecivel ao preito das gerações.

Quando se realizou a grande Exposição Nacional de 1906, coube á nossa douta companhia a tarefa de fazer a estatistica da imprensa brasileira. A maneira por que se desempenhou o Instituto da opportuna idéia, que fôra o primeiro a lembrar, levando-a a cabo com aturados e pacientes esforços, imprescindiveis á collecta e catalogação de cerca de 30,000 jornaes e periodicos dados á estampa em todo o país, desde o primeiro que aqui se publicara,—constituiu uma das notas de mais relevo daquelle magestoso e innolvidavel certamen.

A nossa prestimosa associação serviu de modelo e de estímulo a todas as suas congeneres da nossa terra. O movimento que se tem operado em muitas das circumscricções do país, para a fundação de gremios regionaes, onde tambem se cultuem as tradições venerandas da patria, ou partiu do exemplo efficiente dos legionarios da longeva criação de 1838, ou contou com o seu apoio efficaaz. E essas filiaes, que estão a expandir ensinamentos por toda a extensão do Brasil, têm-se revelado dignas da sua gloriosa matriz.

Não é nosso proposito descrever todo o copioso patrimonio de glorias do Instituto, nem evocar, nome a nome, episodio a episodio, o inventario do seu desenvolvimento em quasi um centennio de pujante e valioso trabalho.

Á scintillante trajectoria do nosso gremio por mais de tres quartos de seculo, faltava, entretanto, um florão imprescindivel, destinado a perenne refulgencia. Acaba elle de adquiril-o e de com elle exornar-se, tanto para a admiração dos homens de agora, como para as benções dos porvindouros.

Essa rutila coroa foi o Primeiro Congresso de Historia Nacional, promovido e brilhantemente realizado pela nossa incansavel associação.

As ideias que a egregia reunião levantou e os materiaes inestimaveis que reuniu, mediante o concurso do escol dos especialistas do país, formam um manancial de incalculaveis beneficios para a nossa civilização e para a nossa cultura.

É-nos licito esperar, graças aos elementos valiosos com cuja adhesão se conta por seguro, que tenha exito igualmente feliz e brilhante o Segundo Congresso, que se deverá reunir em 1922 com um caracter mais amplo, interessando a toda a America.

A administração suprema do colendo cenaculo esteve sempre confiada, como ainda agora, a emeritos patriotas, graças a cuja dedicação, competencia e tino pratico grançou elle a sua fama e a sua prosperidade.

Até hoje, não passou de oito o numero dos seus presidentes effectivos, quatro dos quaes serviram durante o Imperio e outros quatro têm servido durante a Republica.

O visconde de S. Leopoldo pertence á veneranda e gloriosa phalange dos fundadores, e a sua operosa gestão extendeu-se de 1838 a 1847.

Mais dilatada foi a direcção do marquês de Sapucahy, a qual alcançou até 1875; devem-se-lhe, serviços inesqueciveis, como, entre muitos outros, o de ter attrahido para o incipiente gremio a efficaaz sympathia e o forte amparo de dom Pedro II, cuja amizade por aquelle seu velho e illustre mestre não ha quem ignore.

Coubé a investidura, em seguida, ao visconde do Bom-Retiro, que, até fallecer em 1886, não desmereceu, naquella posto, da nomeada que lograra nos departamentos da governação nacional.

A esses tres titulares e estadistas succedeu um escriptor sem laureas academicas e que jámais tivera entrada no galarim da politica foi Joaquim Norberto de Sousa Silva, para quem a elevada curul do Instituto nada mais representou que o reconhecimento, por parte dos seus companheiros, da sua incontestavel habilitação theorica e o justo premio da sua infatigavel actividade na pesquisa dos annaes patrio. Expirou elle em 1891, deixando, aqui perpetuamente vinculada a uma longa e brilhante fé-de-officio a sua honrada memoria.

Substituiu-o o conselheiro Olegario Herculano de Aquino e Castro, presidente do Supremo Tribunal Federal, cuja integridade de character, auxiliada por peregrinos dotes intellectuaes, nos dois cargos simultaneos se revelou com equal valor. Deixou sulco profundo a sua passagem por esta casa, cujos destinos regeu até ao anno do seu fallecimento, 1906.

Foi preenchida a sua vaga, mas apenas pelo espaço de doze meses, pelo venerando marquês de Paranaguá. Estava este benemerito compatrio já nonagenario. A sua escolha representou sómente mais uma consagração á aureola que lhe circumdava as cãs. A outro titulo, não era curial se impuzesse tão arduo onus ao velho brasileiro, que chegara á extrema ancianidade contando tão farta somma de serviços á terra natal. Assim, a sua palavra oracular só se fez ouvir na chefia desta associação até 1907.

Coube ao barão do Rio-Branco a sua successão. O patrono do Brasil nas seculares contendas das Missões e do Amapá, como que predestinado a ser o integrador dos definitivos limites patrios, o "Chancellor da Paz," cujo largo descortino abrangia, a toda a luz, a necessidade da confraternização sul-americana e da hegemonia politica da terra de Santa-Cruz nesta parte do continente de Colombo, conhecia, melhor que ninguem, a coefferencia do Instituto Historico para essas empresas titanicas. Assim, a sua superior administração deste gremio não passou de um prolongamento da sua alta função de ministro das Relações Exteriores. Da cathedra de presidente da nossa companhia foi que o seu verbo poderoso derribou o unico obstaculo á almejada "entente cordiale" entre o Brasil e as nações vizinhas, oriundas do antigo vice-reino do Prata. Ao entrar, liberto das contingencias da materia, no pantheon da immortalidade, a sua gloria insobrepujavel já fazia parte integrante do apanagio do Instituto Historico.

A lacuna aberta aqui pela morte do barão do Rio-Branco assumiu, portanto, proporções desmedidas e demandou muito acerto na escolha do seu successor, com crecidas responsabilidades para este. Mas o criterio, a felicidade da eleição do conde de Affonso Celso estão sobejamente comprovados. Parlamentar experimentado, prossador eximio, poeta distinctissimo, homem de letras a valer, estes dotes bastariam a justificar a sua chamada para o elevado posto nesta casa, onde ás suas producções historicas já se havia tributado a devida justiça. Entretanto, aquelles varios predicados não são os unicos que exornam o actual presidente do Instituto Historico: como um pallio luminoso e suggestivo a envolver toda a sua personalidade, paira tambem o prestigio que a caracteriza, o prestigio que emana da linha inquebrantavel do seu character. O devotamento que o preclaro e estimado brasileiro tem posto em todas as irradiações da vida da nossa prestante associação, augura a esta uma era nova de invejavel prosperidade e de intenso fulgor. O conde de Affonso Celso, em summa, podemos aseveral-o sem a menor lisonja á sua pessoa, tem correspondido, cabalmente, integralmente, ás justas esperanças que determinaram a sua eleição.

É justo recordar tambem que, como presidentes interinos, prestaram reaes serviços ao nosso benemerito gremio os srs. conselheiro Manuel Francisco Correia, e visconde de Ouro-Preto, dois brasileiros eminentes, de quem jámais nos esqueceremos.

Não nos é possivel, em summarição tão exigua como a presente, lembrar os nomes de todos os venerandos concidadãos que trouxeram a este cenaculo, em tão longa existencia, o concurso das duas luzes, a efficiencia da sua cooperação. Na vice-

presidencia, na secretaria, na bibliotheca, no archivo, ha mourejado todo um pugillo de homens, para quem o amor da patria e da sua historia não foi e não é um simples vaniloquio.

Conta ainda afortunadamente o *Instituto* com a dedicação de um mestre, que só iniquidade clamorosa pudera fazer hoje olvidar—o Dr. Vieira Fazenda. É nome tão conhecido, que dispensa maiores encomios. Identificou-se com a meritoria aggre-miação e constitue, com a sua illustre directoria, fóco de possante attracção para os talentos que se votam aos estudos historicos.

Revivendo uma pratica de dias mais propicios á vida nacional e visando a despertar do marasmo, em que anda infelizmente immersa, a geração de agora para as effusões de um civismo consciencioso, o conde de Affonso Celso tem promovido varias séries de conferencias adequadas ao programma fundamental do Instituto e que iniciaram uma como phase nova na existencia deste estabelecimento.

Homens illustres, com verdadeiro pendor para as investigações do passado, e escriptores de nome feito em certamens do pensamento, têm realizado nesta casa verdadeiros cursos scientificos, cuja necessidade e oportunidade se não podem pôr em duvida.

A partir de fins de 1913, effectuaram-se os seguintes: o do Dr. Alberto Rangel, sobre a "Aspectos brasileiros;" o do professor Basilio de Magalhães, sobre o "Bandeirismo Paulista;" o do Dr. Aurelino Leal, sobre a "Evolução Constitucional do Brasil;" o do Dr. Pinto da Rocha, sobre "Historia Diplomatica;" o do Dr. Viveiros de Castro, sobre "Historia Tributaria;" o do Dr. Ramalho Ortigão, sobre "Historia financeira;" e o do Dr. Araujo Vianna, sobre "As Artes Plasticas no Brasil, em geral e no Rio de Janeiro, em particular."

Ora, a existencia dessas e de tantas outras capacidades todas dispostas a trabalhar assidua e indefessamente em prol do porvir grandioso da patria, e a inexistencia, em nosso pais, de uma especie de universidade livre, não visando a fins puramente academicos, mas a sérias investigações de tudo quanto diga respeito ao Brasil, intellectualmente, moralmente e economicamente, compelliram o autor da presente memoria a idear a criação de uma Escola de Altos Estudos, como filial do proprio Instituto Historico, cuja feição se vinha francamente inclinando para isso nos ultimos tempos. Para levar por deante a sua aspiração, pediu elle ao egregio espirito de Oliveira Lima, cuja competencia é por todos reconhecida, um programma que estafizesse áquelle justo intento. E, obtida a collaboração do eminente brasileiro, cuja nomeada ha muito que transpoz as fronteiras da patria, foi, emfim, formulado o projecto, que mereceu a unanime approvação desta casa, em sua sessão de 12 de outubro do corrente anno.

Assim, em começo de 1916, que é quando se vai inaugurar aqui a Escola de Altos Estudos, poderá a nossa associação desvanecer-se de contar em seu patrimonio, já tão opulento, mais uma conquista que a ha de perpetuamente dignificar, equiparando-a, a um importante aspecto pelo menos, ao celebre Instituto de França ou á famoça Sorbona.

Em conclusão, um gremio que assim toma a serio a sua maisseio cultural, o seu destino patriotico, faz honra á terra amada que o viu surgir e florecer.

(B) A "REVISTA."

Tendo começado a publicar-se em 1839, saiu sempre a lume com a mais rigorosa pontualidade.

Não ha successo algum capital da evolução brasileira que não tenha sido investigado ou documentado pelo organ do Instituto Historico, que é, portanto, a fonte mais crystallina e mais rica das tradições patrias, para cuja sanção e pleno esclarecimento continúa elle a concorrer, num esforço incessante e infatigavel, graças principalmente á escrupulosa direcção que se lhe tem dado, desde o seu apparecimento, e ha quattro annos attribuida ao Dr. Benjamin Franklin Ramiz Galvão, tão proveccto hellenista quanto erudito historiographo. Já a dirigiu tambem o autor da presente memoria, de quem foi então inestimavel e operoso auxiliar o saudoso Luis Leitão.

Não falando nas commemorações que determinaram volumes especiaes (convém assignalar que só ao recente Primeiro Congresso de Historia Nacional se consagraram cinco grandes tomos, dos quaes dois já estão fóra do prélo), têm sido insertos na Revista muitos trabalhos de notorio valor, entre os quaes são dignos de menção particular os seguintes:

(1) O Instituto Historico e Geographico Brasileiro é o representante das ideias de illustração, que em diferentes épocas se manifestaram em o mosso continente, pelo visconde de S. Leopoldo, t. I, pag. 77.

(2) Si a introdução dos escravos africanos no Brasil embarça a civilização de nossos indigenas, dispensando-lhes o trabalho, que foi confiado aos negros. Neste caso, qual é o prejuizo que soffre a lavoura brasileira, pelo conego Januario da Cunha Barbosa, t. I, pag. 159.

(3) Qual seria hoje o melhor systema de colonizar os indios entranhados em nossos sertões, pelo conego Januario da Cunha Barbosa, t. II, pag. 3.

(4) Parecer acerca da obra intitulada, Reflexões criticas sobre o escripto do seculo XVI intitulado Noticias do Brasil, pelo Francisco Adolfo de Varnhagen, t. II, pag. 109.

(5) Tesouro descoberto no maximo rio Amazonas (noticia geral), pelo Francisco Adolfo Varnhagen, t. II, pag. 321-329.

(6) Memoria sobre a necessidade do estudo e ensino das linguas indigenas do Brasil, por Francisco Adolfo Varnhagen, t. III, pag. 53.

(7) Extractos da correspondencia de Thomas Jefferson a respeito dos planos da conjuração mineira, t. III, pag. 208.

(8) Propriedade e posse das terras do Cabo do Norte pela corda de Portugal, memoria escripta no Pará em 1792 por Alexandre Rodrigues Ferreira, t. III, pag. 389.

(9) Memoria sobre a antiga escola de pintura fluminense, pelo Manuel de Araujo Porto-Alegre, t. III, pag. 547.

(10) Onde aprenderam e quaes foram os artistas que fizeram levantar os templos dos jesuitas e fabricaram as estatuas que ahi se acham collocadas, pelo desembargador Rodrigo de Sousa da Silva Pontes, t. IV, pag. 65.

(11) Carta escripta da Lagoa Santa, pelo dr. Pedro Lund, t. IV, pag. 80.

(12) Qual a condição do sexo feminino entre os indigenas, pelo José Joaquim Machado de Oliveira, t. IV, pag. 168.

(13) Memoria sobre as aldeias de indios da provincia de S. Paulo, segundo as observações feitas no anno de 1798, pelo José Arouche de Toledo Rondon, t. IV, pag. 295.

(14) Carta do mestre João, physico de El Rey, para o mesmo Senhor, de Vera-Cruz, a 1 de maio de 1500, t. V, pag. 364.

(15) Informação das terras do Brasil, pelo padre Manoel da Nobrega, t. VI, pag. 91.

(16) Si todos os indigenas do Brasil, conhecidos até hoje, tinham ideia de uma unica divindade ou si a sua religião se circumscrevia apenas a uma mera e superstitiosa adoração de fetiches, pelo José Joaquim Machado de Oliveira, t. VI, pag. 133.

(17) Carta do dr. Pedro Lund, escripta da Lagoa Santa (Minas Geraes) a 21 de abril de 1844, sobre novas descobertas de ossos fosseis, achados em suas excavações, t. VI, pag. 334.

(18) Como se deve escrever a historia do Brasil, pelo dr. Carlos Frederico Philippe de Martius, t. VI, pag. 389.

(19) Informação do Brasil e das capitancias em 1584, t. VI, pag. 412.

(20) Historia da capitania de S. Vicente desde sua fundação por Martim Affonso de Sousa em 1531, escripta pelo Pedro Taques de Almeida Paes Leme em 1772, t. IX, pag. 137, 293, e 445.

(21) O Caramurú perante a historia, pelo Francisco Adolfo de Varnhagen, t. X, pag. 129.

(22) Memoria historica e documentada da revolução da provincia do Maranhão desde 1839 até 1840, por Domingos José Gonçalves de Magalhães, t. X, pag. 263.

(23) Memoria sobre os limites do Brasil com a Guyana Francesa, conforme o sentido exacto do artigo 8º do tratado de Utrecht, pelo dr. Joaquim Caetano da Silva, t. XIII, pag. 421.

(24) Tratado descriptivo do Brasil em 1587, obra de Gabriel Soares de Sousa, senhor de engenho na Bahia e nella residente 17 annos e seu vereador da camara, edição pelo Francisco Adolfo Varnhagen, t. XIV, pag. 1.

(25) Memoria historica e documentada das aldeias de indios da provincia do Rio de Janeiro, por Joaquim Norberto de Sousa Silva, t. XVII, pag. 273.

(26) Iconographia brasileira, por Manuel de Araujo Porto-Alegre, t. XVII, pag. 349.

(27) Quaes são as principaes plantas que hoje se acham acimatadas no Brasil, pelo Francisco Freire Allemão, t. XVII, pag. 539.

(28) Almanack historico da cidade de S. Sebastião do Rio de Janeiro (1799), por Antonio Duarte Nunes, t. XXI, pag. 5.

(29) Historia da Provincia de Santa Cruz, pelo Pero de Magalhães Gandavo, t. XXI, pag. 367.

(30) Memoria do dr. Guilherme Schuch Capanema sobre as tradições ou vestigios geologicos que nos levem á certeza de ter havido terremotos no Brasil, t. XXII, pag. 135.

(31) Memoria sobre a fundação das faculdades de direito no Brasil, pelo dr. Carlos Honorio de Figueiredo, t. XXII, pag. 507.

(32) Os indigenas do Brasil perante a historia, pelo dr. Domingos José Gonçalves de Magalhães, t. XXIII, pag. 3.

(33) Diario da navegação de Pero Lopes de Sousa (1530-1532), t. XXIV, pag. 9.

(34) Roteiro de Duarte Fernandes e mais documentos relativos á viagem da nau Bretoa, t. XXIV, pag. 96.

(35) Questões americanas pelo dr. Joaquim Caetano da Silva: Commentarios sobre a obra de Alexandre de Humboldt; Exame critico da historia do novo continente, t. XXVI, pag. 269.

(36) Annaes da provincia de Goyaz, pelo José Martins Pereira de Alencastre, t. XXVII, pags. 5 e 230. Continúa no t. XXVIII, pag. 5.

(37) Igreja do Brasil ou informação para servir de base á divisão dos bispados, projectada no anno de 1819, com a estatistica da população do Brasil, etc., pelo conselheiro Antonio Rodrigues Velloso de Oliveira, t. XXIX, p. 1ª, pag. 159.

(38) Confederação do Equador, noticia historica sobre a revolução pernambucana de 1824, pelo dr. Antonio Pereira Pinto, t. XXIX, p. 2ª, pag. 36.

(39) Brasil e Oceania, pelo Antonio Gonçalves Dias, t. XXX, p. 2ª, pag. 5.

(40) Nobiliarchia paulistana, genealogia das principaes familias de S. Paulo, pelo Pedro Taques de Almeida Paes Leme, t. XXXII, p. 1ª, pags. 175 e 209. Continua nos t. XXXIII (p. 1ª, pags. 5 e 157; p. 2ª, pags. 27 e 149), t. XXXIV (p. 1ª, pags. 5 e 141; p. 2ª, pags. 5 e 129), e t. XXXV (p. 1ª, pags. 5 e 243; e p. 2ª, pag. 5).

(41) Breve discussão chronologica acerca da descoberta do Brasil, pelo Henrique de Beaurepaire Rohan, t. XXXII, p. 2ª, pag. 231.

(42) Apontamentos para a historia dos jesuitas no Brasil, extrahidas das chronicas da companhia de Jesus, por Antonio Henrique Leal, t. XXXIV, p. 2ª, pags. 47, e 195. Continúa no t. XXXVI, pags. 65, 201 e 347.

(43) Apontamentos historicos sobre a ordem benedictina em geral e em particular sobre o mosteiro de N. S. do Monserrate do Rio de Janeiro, pelo dr. Benjamin Franklin Ramiz Galvão, t. XXXV, p. 2ª, pag. 248.

(44) Notas diarias sobre a revolta, que teve logar nas provincias do Maranhão, Piahy e Ceará, pelos annos de 1838-1840, t. XXXV, p. 2ª, pag. 423.

(45) Primeiras explorações da costa brasilica em 1501-1506, pelo barão de Porto-Seguro, t. XXXVI, p. 2ª, pag. 55.

(46) Ensaio de anthropologia—religião e raças selvagens, pelo dr. José Viera Couto de Magalhães, t. XXXVI, p. 2ª, pag. 359.

(47) Corographia historica da Provincia de Goyaz, pelo brigadeiro Raymundo José da Cunha Mattos, t. XXXVII, p. 1ª, pag. 213.

(48) Historia da guerra de Pernambuco e feitos memoraveis do mestre de campo João Fernandes Vieira, pelo Diogo Lopes de Santiago, t. XXXVIII, pag. 249. Continúa nos t. XXXIX (pags. 97 e 323), t. XL (pag. 411), t. XLI (pags. 143 e 387), t. XLII (pag. 57) e t. XLIII (pags. 5 e 191).

(49) Notas sobre a historia patria, pelo Candido Mendes de Almeida, t. XXXIX, p. 2ª, pag. 5.

(50) Notas acerca de como não foi na Coroa Vermelha, na enseada de Santa Cruz, que Cabral primeiro desembarcou, etc., pelo visconde de Porto-Seguro, t. XL, p. 2ª, pag. 5.

(51) Carta de Americo Vespucio na parte que respeita as suas tres viagens ao Brasil, traduzidas e annotadas criteriosamente pelo visconde de Porto-Seguro, t. XII, p. 1ª, pag. 5.

(52) O primitivo e o actual Porto Seguro, pelo Henrique de Beaurepaire Rohan, t. XLIII, p. 2ª, pag. 5.

(53) Guerra civil do Rio Grande do Sul, pelo Tristão de Alencar Araripe, t. XLIII, p. 2ª, pags. 115 e 293. Continúa nos t. XLV (p. 2ª, pag. 33), t. XLVI (p. 2ª, pag. 165) e t. XLVII (p. 2ª, pag. 47).

(54) Memoria sobre o melhor plano de escrever a historia antiga e moderna do Brasil, pelo Julio de Wallenstein, t. XLV, p. 1ª, pag. 159.

(55) Ideias de independencia do Brasil em fins do seculo passado, Cartas de Vandek e Thomás Jefferson, t. XLVII, p. 1ª, pag. 123.

(56) Diario da viagem philosophica pela capitania de S. José do Rio Negro, pelo dr. Alexandre Rodrigues Ferreira, t. XLVIII, p. 1ª, pag. 1.

(57) Fortificações no Brasil, etc., pelo Augusto Fausto de Sousa, t. XLVIII, p. 1ª, pag. 5.

(58) Cidades petrificadas e inscripções lapidares no Brasil, pelo Tristão de Alencar Araripe, t. I, p. 1ª, p. 213.

(59) Ideias de José Bonifacio sobre a organização politica do Brasil, quer como reino unido a Portugal, quer como Estado independente, pelo Tristão de Alencar Araripe, t. LI, p. 2ª, pag. 79.

(60) Narração historica das calamidades de Pernambuco (1707-1715), t. LIII, p. 2ª, pag. 1.

(61) America abreviada, etc., pelo padre João de Sousa Ferreira, t. LVII, p. 1ª, pags. 5.

(62) Historia da revolução em Pernambuco em 1817, pelo dr. Francisco Muniz Tavares, t. LX, p. 1ª, pag. 103.

(63) Subsídio para a historia das minas, Consulta do Conselho Ultramarino, em que deu parecer Salvadado Corrêa de Sá e Benevides, t. LXIII, p. 1, pag. 5.

(64) O Brasil intellectual em 1801, pelo barão Homem de Mello, t. LXIV, p. I, pag. 5.

(65) Informação sobre as minas de S. Paulo e dos sertões de sua capitania, desde 1597 até 1772, pelo Pedro Taques de Almeida Paes Leme, t. LXVI, p. I, pag. 1.

(66) Narrativa epistolar de uma viagem e missão jesuitica, pelo Padre Fernão Cardim (1583-1590), t. LXV, p. I, pag. 11.

(67) Relação dos manuscritos portuguezes e estrangeiros de interesse para o Brasil, existentes no Museu Britannico de Londres, pelo dr. Manoel de Oliveira Lima, t. LXV, p. II, pag. 5.

(68) Memorias do Instituto Historico, t. LXV, p. I, pag. 341.

(69) A Balaiada (1839), depoimento de um dos heroes do cerco de Caxias, etc., pelo dr. Rodrigo Octavio de Ilanggaard Menezes, t. LXV, p. II, pag. 285.

(70) A moeda no Brasil, historia de uma collecção de moedas e medalhas do Brasil, etc., pelo Miguel Archanjo Galvão, t. LXV, p. II, pag. 9.

(71) O Forte de Coimbra, sua fundação e os acontecimentos que com ella se relacionam, pelo general Francisco Raphael de Mello Rego, t. LXVII, p. II, pag. 170.

- (72) Rio abandonado (o Purús), pelo Euclides da Cunha, t. LXVIII, p. II, pag. 377.
- (73) Questão Mauer—Os Mukers, pelo Eduardo Marques Peixoto, t. LXVIII, p. II, pag. 393.
- (74) O Direito no seculo XIX, pelo Dr. Pedro Augusto Carneiro Lessa, t. LXVIII, p. 21, pag. 507.
- (75) A Santa Casa de Misericordia do Rio de Janeiro, pelo Dr. José Vieira Fazenda, t. LXIX, p. I, pag. 7.
- (76) Da Independencia á Republica, pelo Euclides da Cunha, t. LXIX, p. II, pag. 7.
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- (84) Ilha da Carioca, pelo Dr. José Vieira Fazenda, t. LXXI, p. I, pag. 23.
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- (87) Uma Fazenda Historica. Borda do Campo, pelo Dr. José Bonifacio de Andrada e Silva, t. LXXII, p. II, pag. 127.
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- (92) Joaquim Aurelio Nabuco de Araujo, pelo Dr. Sebastião de Vasconcellos Galvão, t. LXXIV, p. II, pag. 9.
- (93) Subsídios para a Historia do Instituto Historico, pelo Dr. José Vieira Fazenda, t. LXXIV, p. II, pag. 279.
- (94) Os Kraós do Rio Preto no Estado da Bahia, pelo Dr. Theodoro Sampaio, t. LXXV, p. I, pag. 143.
- (95) Bi-centenario de Ouro Preto, pelo Conde de Affonso Celso, t. LXXV, p. I, pag. 207.
- (96) Um amigo do Brasil, Ferdinand Denis, pelo Dr. Escragnolle Doris, t. LXXV, p. I, pag. 217.
- (97) Fastos Pernambucanos, pelo Dr. Pedro Souto Maior, t. LXXV, p. I, pag. 259.
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- (100) D. Pedro II no Egypto, pelo Dr. Nicolau José Debbané, t. LXXV, p. II, pag. 131.
- (101) Apontamentos genealogicos da Familia Andrada, pelo Dr. José Bonifacio de Andrada e Silva, t. LXXVI, p. I, pag. 21.
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- (104) O Ministro da Fazenda da Independencia, pelo Dr. Antonio Carlos Ribeiro de Andrada, t. LXXVI, p. I, pag. 371.
- (105) Aspectos geraes do Brasil, pelo Dr. Alberto Rangel, t. LXXVI, p. I, pag. 453.
- (106) Diccionario de brasileirismos, pelo Dr. Rodolpho Garcia, t. LXXVI, p. I, pag. 633.
- (107) Historia da Guerra do Paraguay e episodios da viagem na America do Sul, por Max von Versen (major do exercito real da Prussia), traducção do Dr. Manoel Thomas Alves Nogueira, t. LXXVI, p. II, pag. 7.
- (108) Cartas de João Loureiro, escriptas do Rio de Janeiro ao Cons^o. Manoel José Maria da Costa e Sá (1828-1842). t. LXXVI, p. II, pag. 273.
- (109) A colonisação da Capitania do Rio Grande do Norte, pelo Dr. Augusto Tavares de Lyra, t. LXXVII, p. I, pag. 9.
- (110) Aspectos do periodo regencial, pelo Dr. José Vieira Fazenda, t. LXXVII, p. I, pag. 45.
- (111) O bandeirismo no Brasil, pelo professor Brasílio de Magalhães, t. LXXVII, p. I, pag. 71.
- (112) Fastos paraenses, pelo Dr. Manoel de Mello Cardoso Barata, t. LXXVII, p. I, pag. 115.
- (113) A correspondencia do Barão de Wensel de Marschall, pelo Dr. Jeronymo de A. Figueira de Mello, t. LXXVII, p. I, pag. 179.
- (114) Historia Constitucional do Brasil, pelo Dr. Aurelino de Araujo Leal, t. LXXVII, p. I, pag. 295.
- Das duas partes publicadas do Tomo Especial do Primeiro Congresso de Historia Nacional, salientaremos apenas os seguintes trabalhos:
- (115) A Colonização, Capitánias, pelo Dr. Jonathas Serrano, Vol. I, pag. 185 (these official).
- (116) Estabelecimento de um governo geral. Os primeiros jesuitas, pelo Dr. José Eduardo Freire de Carvalho, Vol. I, pag. 207 (these official).
- (117) O dominio hespanhol, pelo Dr. Lucio José dos Santos, Vol. I, pag. 249 (these official).
- (118) O Padre Antonio Vieira, pelo Dr. Antonio Fernandes Figueira, Vol. I, pag. 337 (these official).
- (119) Tentativas de Independencia, pelo Dr. A. Velloso Rebello, Vol. I, pag. 391 (these official).
- (120) Dominio hollandez no Brasil, especialmente no Rio Grande do Norte, pelo Dr. Augusto Tavares de Lyra, Vol. I, pag. 347 (these avulsa).
- (121) João Francisco Du Clerc (Fragmentos de uma memoria), pelo Dr. Gastão Ruch Sturzenecker, Vol. I, pag. 507 (these avulsa).
- (122) Domingos José Martins, pelo Dr. Marcilio Teixeira de Lacerda, Vol. I, pag. 553 (these avulsa).
- (124) Memoria sobre as terras orientaes da antiga freguezia de S. João Baptista Geremoabo, pelo Dr. Braz do Amaral, Vol. I, pag. 951 (these avulsa).
- (125) Subsídios para a historia da cidade de S. Sebastião do Rio de Janeiro, pelo Dr. A. Morales de los Rios, Vol. I, pag. 989 (these avulsa).
- (126) De D. João VI á Independencia, pelo Dr. João Marcondes de Moura Romeiro, Vol. I, pag. 1351 (these avulsa).
- (127) O Imperador D. Pedro II no archivo do conselheiro José Antonio Saraiva, Vol. I, pag. 1509 (these avulsa).
- (128) As capitánias hereditarias perante o Tratado de Tordesilhas, pelo Dr. Clovis Bevilacqua, Vol. II, pag. 5 (these official).
- (129) Expansão geographica do Brasil até fins do Seculo XVII, pelo Professor Basilio de Magalhães, Vol. II, pag. 27 (these official).

(130) *Historia das Entradas; determinação das áreas que exploraram*, pelo Dr. José Baptista, Vol. II, pag. 175 (these official).

(131) *As Bandeiras paulistas (Estabelecimento das directrizes geraces a que obedeceram e estudo das zonas que alcançaram)*, pelo Dr. Gentil de Assis Moura, Vol. II, pag. 221 (these official).

(132) *Os Jesuitas: papel que lhes coube no devassamento do territorio*, pelo Dr. Alfredo de Almeida Russell, Vol. II, pag. 251 (these official).

(133) *A depressão amasonica e seus exploradores*, pelo Dr. Henrique Americo de Santa Rosa, Vol. II, pag. 271 (these official).

(134) *Estudos cartographicos da primeira phase dos descobrimentos na America*, pelo Dr. Orville A. Derby, Vol. II, pag. 325 (these avulsa).

(135) *Peregrinação de Antonio Knivet no Seculo XVI (estudo critico para servir de contribuição á historia e geographia do paiz)*, pelo Dr. Theodoro Sampaio, Vol. II, pag. 345 (these avulsa).

(136) *Algumas palavras sobre o itinerario de Sebastião Fernandes Tourinho e de Antonio Dias Adorno*, pelo Dr. Francisco Lobo Leite Pereira, Vol. II, pag. 391 (these avulsa).

(137) *Synthese historica das tentativas feitas para a utilização como vias navegaveis dos grandes rios que banham o Estado de Goyaz*, pelo Marechal Jeronymo Rodrigues de Moraes Jardim, Vol. II, pag. 409 (these avulsa).

(138) *Os naturalistas viajantes dos Seculos XVIII e XIX e o progresso da ethnographia indigena no Brasil*, pelo Dr. Theodoro Sampaio, Vol. II, pag. 543 (these official).

(139) *As tribus negras importadas. Estudo ethnographico, sua distribuição regional no Brasil. Os grandes mercados de escravos*, pelo Dr. Affonso Claudio, Vol. II, pag. 595 (these official).

(140) *Contribuição para o estudo das questões de que trata a these sexta da secção de Historia das explorações archeologicas e ethnographicas. As tribus negras importadas. Estudo ethnographico, sua distribuição regional no Brasil. Os grandes mercados de escravos*, pelo Dr. Braz do Amaral, Vol. II, pag. 661 (these avulsa).

E só alludiremos aos discursos, alguns formosissimas monographias, que a Revista encerra, pronunciados no Instituto, sobrelevando os dos oradores officiaes, Porto Alegre, Macedo, Ramiz Galvão, Nascimento, Silva, Joaquim Nabuco, Souza Pitanga e Affonso Celso.

Terminamos aqui o nosso modesto estudo. Lacunoso, feito em exiguo tempo, obedecendo apenas a honrosissima determinação da Carnegie Endowment for International Peace, buscou tão sómente patentear o interesse que no Brasil sempre tiveram os seus mais illustres filhos pelas causas da intelligencia. E, a mingua de outro valor, terá, ao menos, o de servir de ponto de partida para outros mais proficientes.

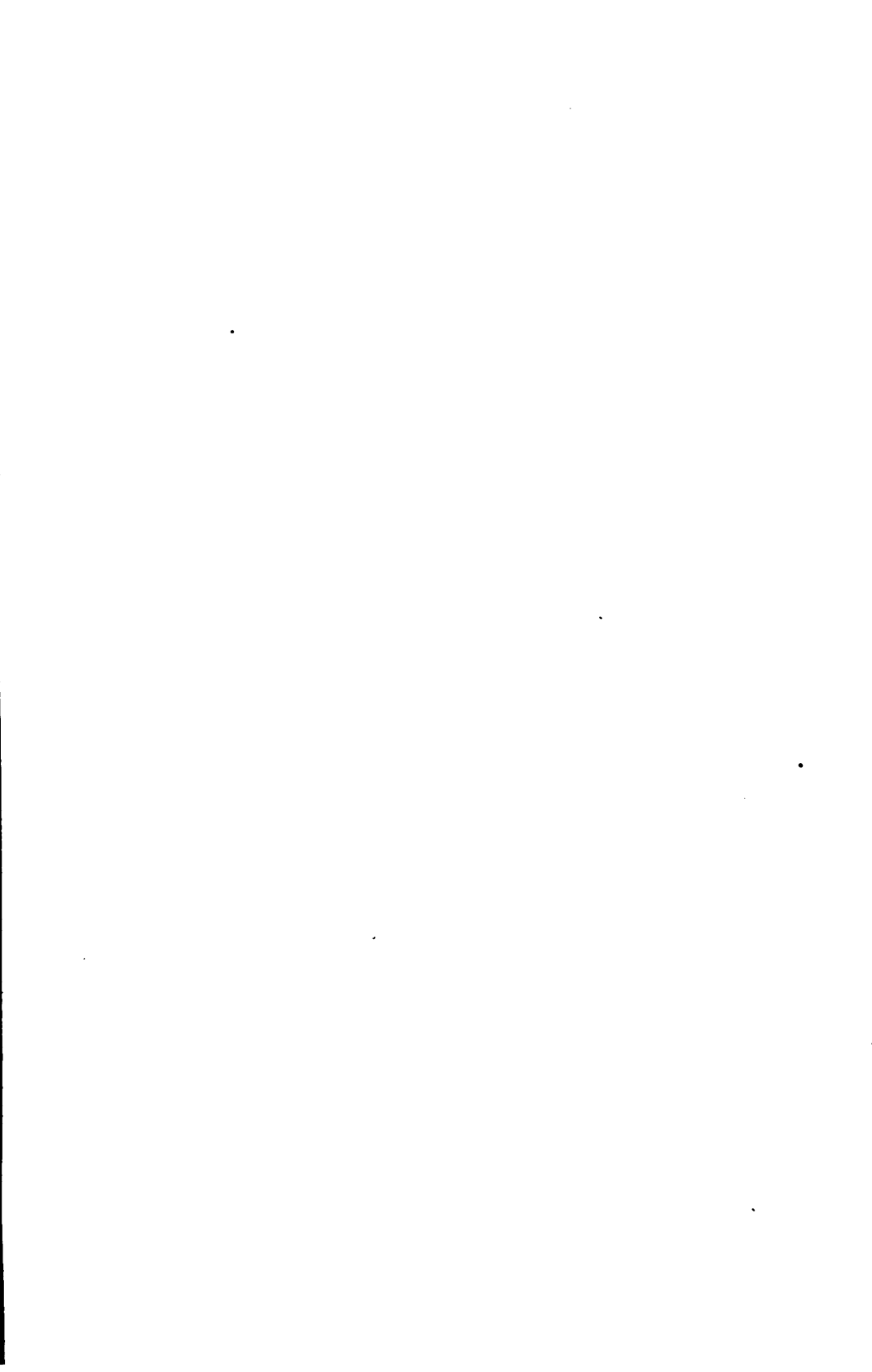
Mr. CLAXTON. I move we adjourn.

Mr. ZANER. I second the motion.

The CHAIRMAN. It is moved and seconded that this final session of Section IV stand adjourned.

Thereupon, at 5.10 o'clock, the section adjourned sine die.





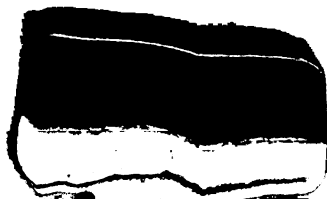




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